Schedule I—The Cotton Tariff

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August, 1910

THE WORLD'S WORK

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The World's Work

WALTER H. PAGE, EDITOR

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CHIEF JUSTICE OF THE UNITED STATES, 1888-1910

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THE WORLD'S WORK

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VOLUME XX NUMBER 4

The March of Events

AUGUST, a political campaign, and business conditions tempered by hesitancy — it is a summer of only mild content and of much unrest.

It costs too much to live. Your Democratic candidate for Congress tells you that the Payne-Aldrich Act and the Government's extravagance are to blame; and your Republican candidate insists on your considering the ever-increasing supply of gold, which is beyond any man's control. Moreover, he asks you, is the high cost of living not a world-wide condition? You may hear what you like and believe as much as you can. A little truth here and a little there makes good gleaning from political fields.

If you do your own thinking, you will recall one fact bigger than all these partisan declarations — the era of free land and even of cheap land in the United States is gone. That is the chief reason why living costs more and will cost more and more. Some of the tariff schedules are oppressive; our banking system is a wrong system for the man of average wealth or credit; the railroads — necessarily as things now go — discriminate against this industry or that or this city or that; and much else is wrong in the tangled world in which we are jumbled together and where we shall never again have as much room as we have hitherto had. The passing of free land and the consequent rise of land values mark the end of an era.

And this is the deep-lying, if unseen, reason for the increasing thoughtfulness and moral earnestness in American life, the reason for "insurgency" in politics, the reason for conservation, the reason for a reëxamination of the tariff, of problems of transportation, and of industrial organization. Men are thinking. They do not all think alike. But they are in a mood to examine everything; and there is a very general feeling that, fortunate and prosperous as we are, the chances for the average man are for some reason not so good as they ought to be. While most men, no doubt, put forth wrong reasons for these changing conditions, they agree that the chance for adventure, for work, and for profit continues to become restricted.

The general unrest touches almost all phases of life. You see it and feel it in business affairs, in politics (mere party loyalty is weaker than at any time in our era), in educational affairs (everybody feels that the schools need readjustment to the life of the present), and in religious affairs. But the level of the conduct and of the character of the whole people is probably higher than it ever was, and their moral earnestness is ever increasing. Personal right-living shows an advance, take the people of our country as a whole, over any other generation. The significant fact is the struggle for higher morals in public and corporate and institutional affairs.

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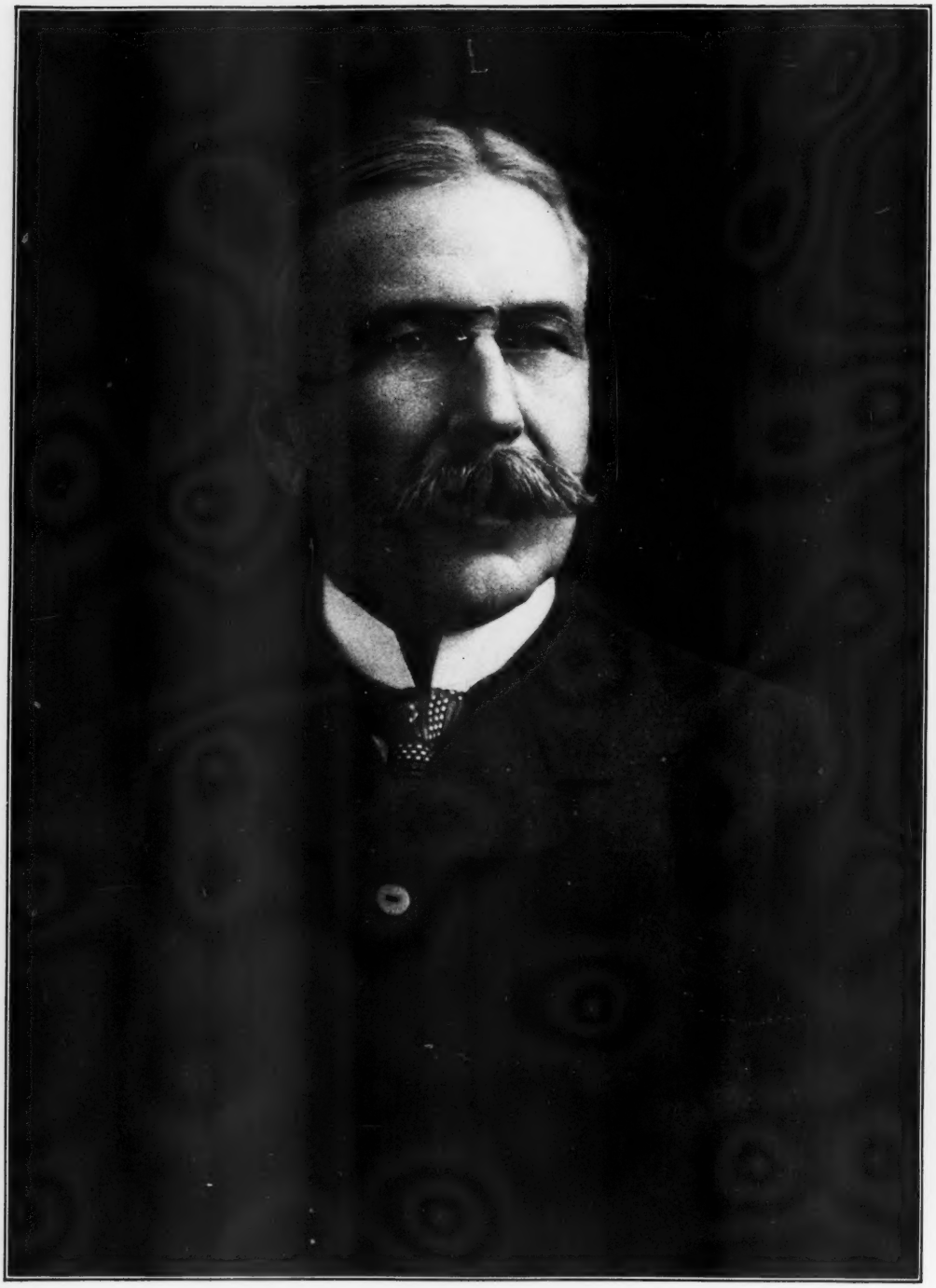
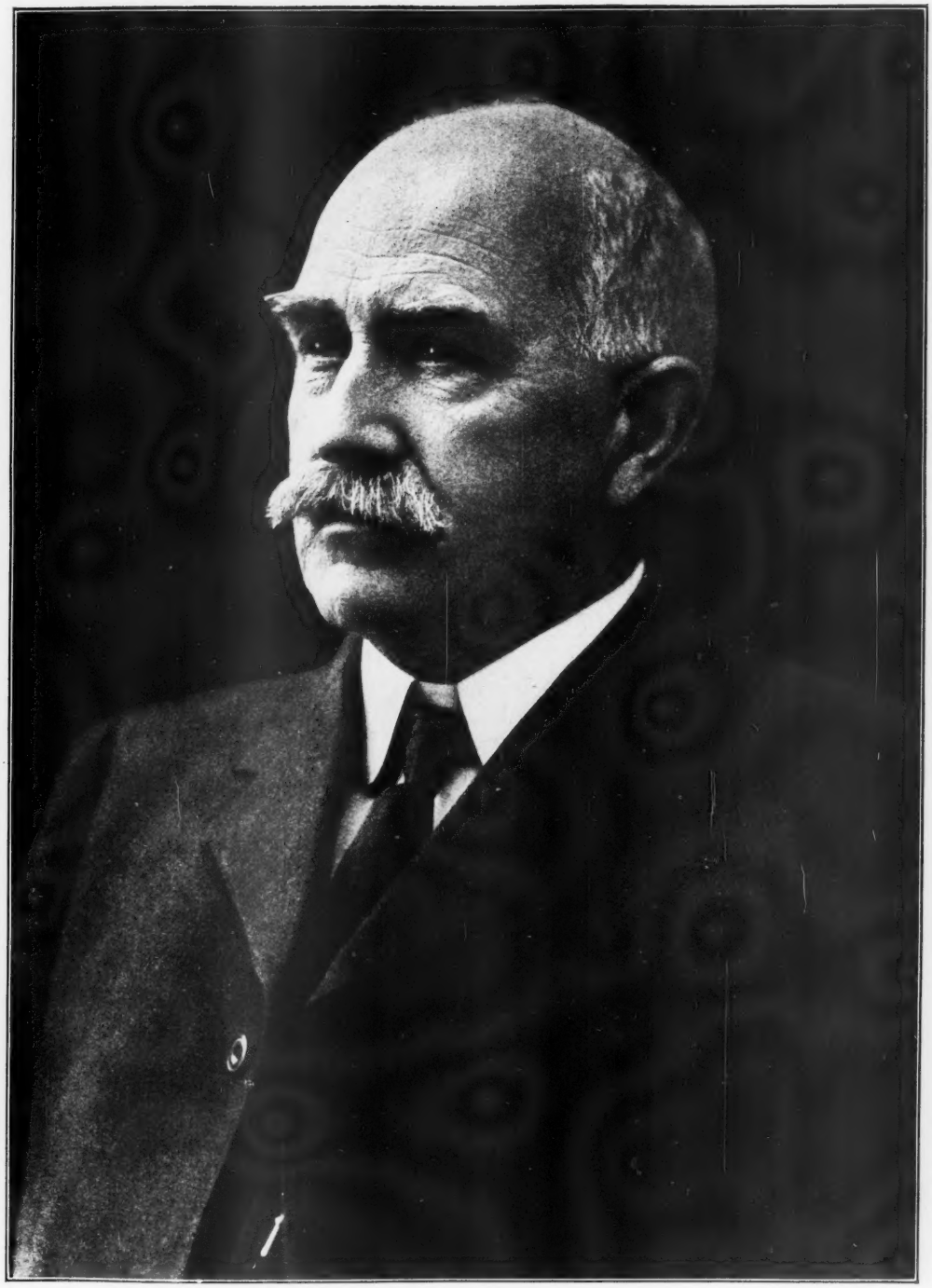


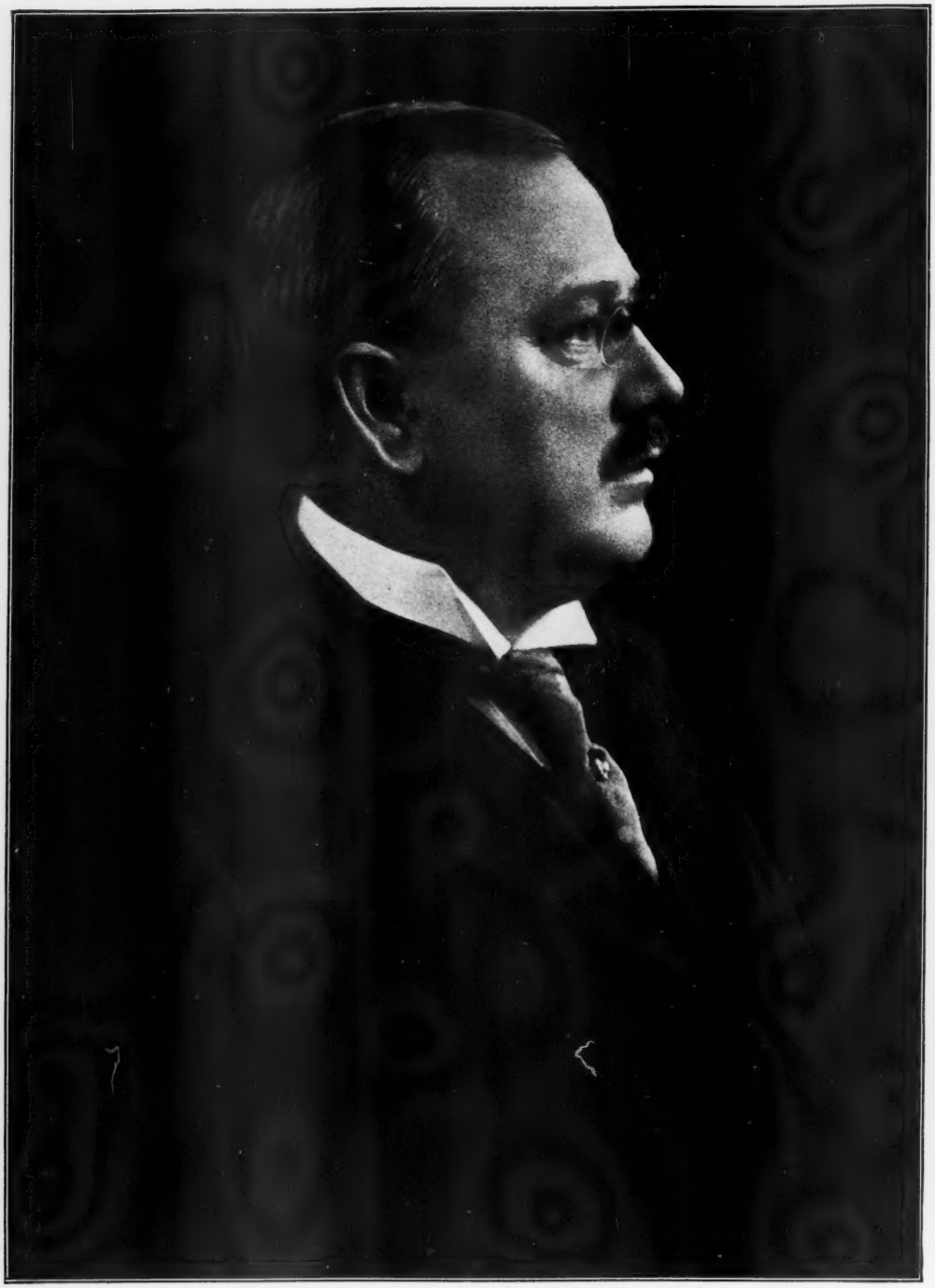
PRESIDENT HARRY HUTCHINS

WHO HAS BEEN CONFIRMED AS SUCCESSOR TO PRESIDENT JAMES BURRILL ANGELL AT THE HEAD OF THE UNIVERSITY OF MICHIGAN



GOVERNOR JUDSON HARMON OF OHIO

WHO BY AN HONEST AND EFFICIENT STATE ADMINISTRATION HAS SECURED A RENOMINATION FOR THE GOVERNORSHIP, AND THE OHIO DEMOCRACY'S SUPPORT FOR THE PRESIDENTIAL NOMINATION IN 1912



MR. GEORGE M. REYNOLDS

THE HEAD OF THE NEWLY CONSOLIDATED COMMERCIAL-CONTINENTAL BANK IN CHICAGO, THE GREATEST COMMERCIAL BANKING ORGANIZATION OUTSIDE OF NEW YORK

[*See "The March of Events"*]

SENATOR THEODORE E. BURTON

THE FOREMOST LEGISLATIVE AUTHORITY UPON AMERICAN WATERWAYS, WHO MADE AN HONEST AND COURAGEOUS ATTACK UPON THE "PORK-BARREL"

[*See "The Crime of the 'Pork-Barrel'," page 13259*]

MR. JAMES R. MacCOLL—A PRIVATE TARIFF MAKER

JOINT AUTHOR WITH MR. HENRY F. LIPPITT OF THE COTTON SCHEDULE "JOKERS" WHICH SENATOR ALDRICH FORCED INTO THE TARIFF BILL. MR. MacCOLL, MR. LIPPITT, AND SENATOR ALDRICH ARE ALL FROM RHODE ISLAND

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MR. HENRY C. EMERY—A TARIFF MAKER FOR THE PUBLIC

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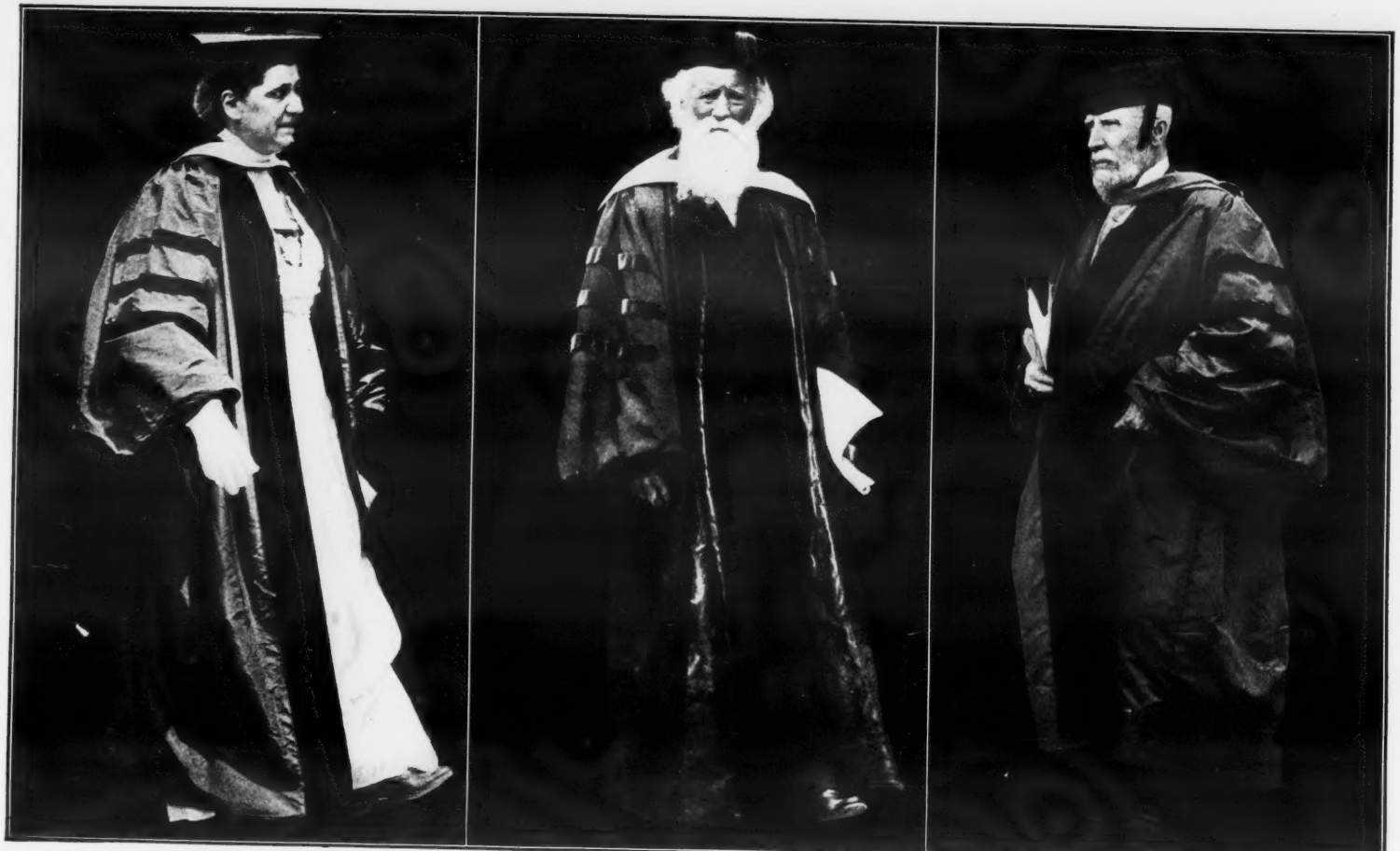

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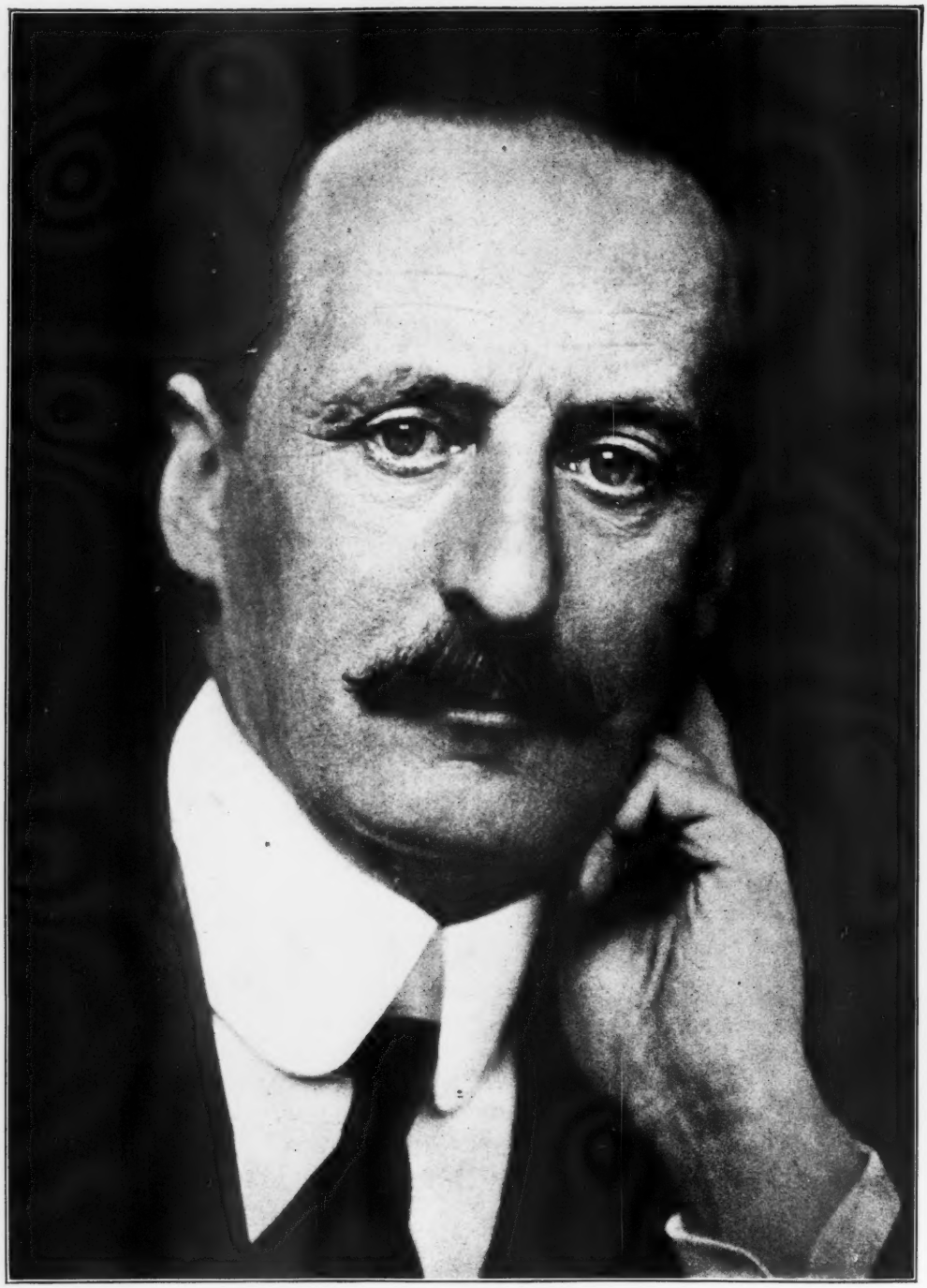
A HUMANITARIAN, A NATURALIST, AND AN EMPIRE BUILDER WHO RECEIVED HONORARY DEGREES FROM YALE UNIVERSITY

[*See "The March of Events"*]

A VILLAGE OF TENANTS IN PORTO RICO

WHERE 90 PER CENT. OF THE RURAL POPULATION DO NOT OWN THE LAND WHICH THEY CULTIVATE AND THEREFORE ARE FAR FROM ECONOMIC INDEPENDENCE

[*See "The March of Events"*]



SIR CHARLES HARDINGE

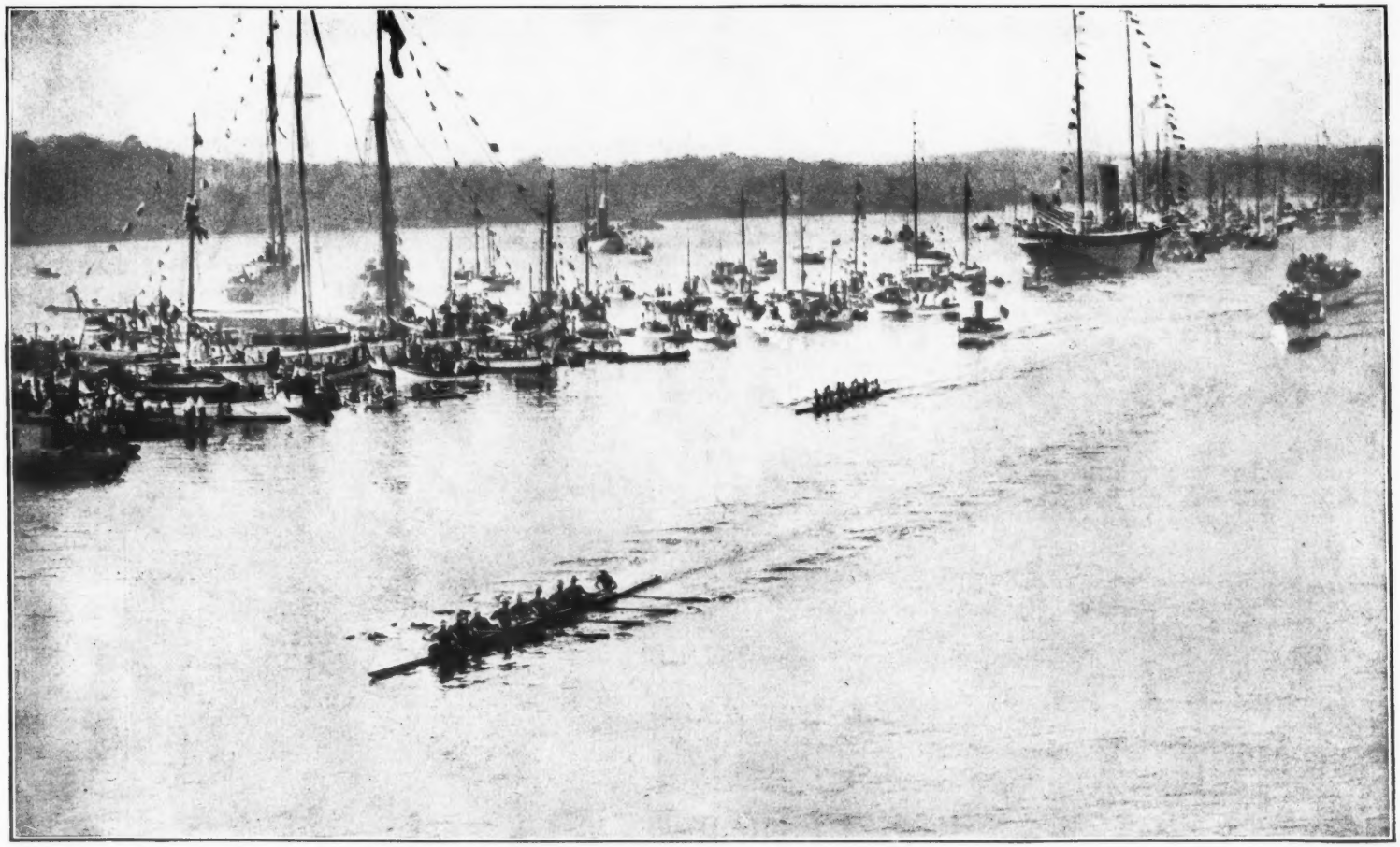
WHO AFTER THIRTY YEARS' SERVICE IN ENGLAND'S FOREIGN AFFAIRS HAS BEEN APPOINTED VICEROY OF INDIA, A POSITION ONCE HELD BY HIS GRANDFATHER

MRS. ELLA FLAGG YOUNG

SUPERINTENDENT OF THE CHICAGO PUBLIC SCHOOLS, RECENTLY ELECTED PRESIDENT OF THE NATIONAL EDUCATIONAL ASSOCIATION, THE FIRST WOMAN TO HOLD THIS POSITION. SHE HAS BEEN TEACHING FOR FORTY-EIGHT YEARS, DURING WHICH TIME SHE HAS PASSED THROUGH EVERY DEPARTMENT OF SCHOOL WORK, INCLUDING A PROFESSORSHIP IN THE UNIVERSITY OF CHICAGO

MR. CLIFFORD B. HARMON AND HIS WIFE

HE IS THE PRESIDENT OF THE AERO CLUB OF AMERICA AND A SKILFUL AND DARING AMATEUR AVIATOR



A BOAT RACE WATCHED BY 50,000 PEOPLE

THE HARVARD-YALE RACE AT NEW LONDON TO WHICH A GREAT FLEET OF YACHTS AND STEAMERS AND MANY SPECIAL TRAINS CARRY PEOPLE EVERY YEAR. HARVARD WON THIS RACE BY FOUR LENGTHS

A PERFECT SCORE AND THE MEN WHO MADE IT

THE CREW OF THE TWELVE-INCH GUN OF THE "SOUTH CAROLINA," WHICH TWICE IN SUCCESSION MADE EIGHT HITS OUT OF EIGHT SHOTS IN TWO MINUTES AND SIXTEEN SECONDS

THE MAN WHO OWNS THE LAND

IT WOULD not be hard to show that the ownership of land by the man who tills it is the very first condition of our national health and character; and, if you wish to find a serious reason for alarm, you may pass over all the bogies of all the politicians and study the growth of tenantry in the United States. American manhood in the long run means rural manhood, and rural manhood means the ownership of land. One of the most pitiful classes of men are the retired farmers in the Middle West who have leased their farms and gone to the towns. They are no longer real masters of the earth and they are but counterfeit town-folk, and many of them are real hindrances to both rural and urban civilization.

The census is likely to show a discouraging increase of tenantry and of absentee land-ownership. Since the free land gave out in the West, speculators and absent investors have begun to buy Southern lands in large quantities. Land so held is not properly cultivated and cared for. But, worse than that, no system of tenantry produces men of stalwart qualities or keeps alive a rural civilization of independent strength.

In Porto Rico, to take an extreme instance, about 65 per cent. of the land is owned by men who live in Spain, about 25 per cent. by men who live in the United States, and about 10 per cent. by men who live in Porto Rico. A typical residence of a tenant, who is really a peon, is shown in a photograph in this magazine. Whatever spirit or ambition such a man may have, the chance of his economic independence is so small that he loses hope; and generation after generation becomes content — besotted with the content of the man with the hoe.

II

The Country Life Commission, appointed by Mr. Roosevelt during the last months of his Administration, called attention to this fundamental danger to American life; and the influence of the Commission's work and report has steadily grown during the last year. Many sorts of organizations have taken up its work, and its report is more in demand now than at any preceding time. The concerted and vigorous sanitary movement in the South to eradicate hookworm disease is one direct result of the Commission's work; and another result is the rapidly increasing organizations of country-folk for selling their products more advantageously.

And the more study that is given to any phase of rural civilization the more clearly it appears that the central misfortune is the growth of tenantry. That the men who till the soil shall own it — that's the primary need. All roads to the right structure of American life lead to that. The worst enemy, therefore, of our children and of their children is the absentee speculator in land, just as he is the most dangerous person also to the stability of business conditions. Such a speculator is, of course, engaged in a lawful pursuit. But more and more men are beginning to ask whether it be a moral pursuit.

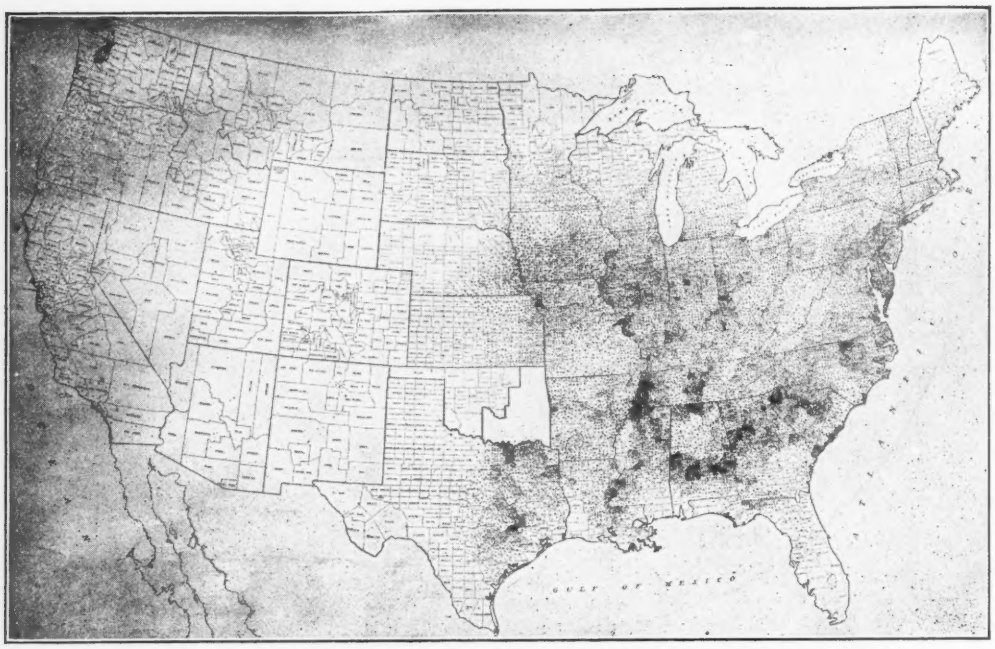
III

In Spokane, Washington, for instance, the continued interest in the subject has taken definite form in a project to establish nearby a Country Life Institute. The statement of purpose runs thus:

"In formulating plans the State Country Life Commission, as well as the Country Life Commission of the Spokane Chamber of Commerce, do so with the confidence that ample ability exists among men and women in the open country to carry out and make practicable any suggestions here made.

"If the city is built by the brains furnished by the country, certainly the country itself can furnish brains not only to build up its own prosperity, but also to induce many people from the towns to go out and enjoy that prosperity with them."

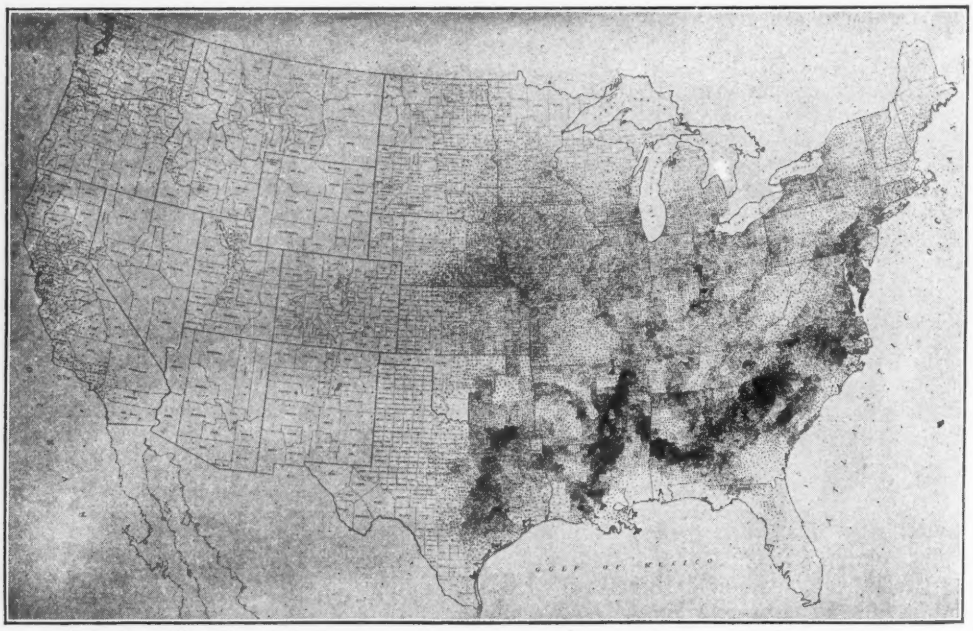
And the plan includes a consolidated school and a spacious schoolhouse; ten acres of schoolgrounds; a home for the master; a community hall; the teaching of practical agriculture, hand-work of all useful sorts, and home arts, the pupils to learn from the farmers, and the farmers to profit by the school; the making of the country school better than any city school, with attention to sports and social recreations such as no city school can give.



From "Forms of Land Tenure in the United States," by Henry C. Taylor, with the financial assistance of the Carnegie Institution

THE TENANT FARMERS IN THE UNITED STATES IN 1880

In 1880 there were 4,008,907 farms in the United States, of which 1,024,601, or about one in every four, were operated by tenants



From "Forms of Land Tenure in the United States," by Henry C. Taylor, with the financial assistance of the Carnegie Institution

THE TENANT FARMERS IN THE UNITED STATES IN 1900

In 1900 there were 5,739,657 farms, of which 2,026,276, or nearly two in every five, were operated by tenants

Mr. B. F. Yoakum, of New York and Texas, chairman of the 'Frisco Railroad System, is one of our closest students of conditions in the West and the Southwest, and he recently said:

"The East does not understand or appreciate what the farmers of the West and Middle West are doing toward organization the better to protect their interests in handling their products. I saw enough at the farmers' convention held in St. Louis to convince me that the farmers as producers are more enterprising than the consumers in our large cities whom their products must feed.

"The farmers are doing two things of importance for themselves and the whole country: They are increasing their production per acre, and they are developing better methods of marketing their crops.

"The agricultural awakening over the country is general and genuine. New methods, both for producing and marketing, are being studied by the farmers and the results are better production and prices with less labor. The farmers' chief difficulty is the adoption of better business methods in marketing their crops. This is now being overcome through organization. In this they are working under disadvantages, some of their efforts being crude and awkward, but they are much in earnest and are making headway.

"The farmers have in the different states over 2,500 selling and buying organizations. Some of these agencies are handling a large business. Some have just organized and are small, but all are working with business-like directness in the interest of the producers."

AN UNUSUAL CONGRESSIONAL RECORD

WE OFTEN think of Congress as a body which devotes its energy to prevent the passage of bills. With regard to many important projects, that is true. But, measured by quantity, there is no lack of legislation. During the last session more than 27,000 bills were introduced in the House, or about 70 bills per Member, not counting resolutions. The Senators did even more, for they averaged nearly 100 bills apiece. It taxes the strength of the Vice-President to read even the names of the bills and to refer them to the proper committees.

Congress passed 521 bills in 201 days including Sundays and holidays; and some of these were "omnibus" bills, which included many separate acts. For instance, about 6,000 private bills, for the building of bridges and lighthouses and dealing with the Indians and territorial affairs, were rolled into four such "omnibus" bills and passed in a lump. About 7,000 private pension bills were put into ninety measures passed by Congress between December 6th and June 25th and in spite of the time lost in Sundays, holidays, and in administering a rebuke to Mr. Cannon.

Private bills and bills of trifling importance take an amazing amount of time — such, for instance, as bills to allow bridges to be built over little used creeks or to correct the military record of a pension applicant. It is as if the board of directors of the Steel Corporation should pass upon the kind of fence to be built around a vacant lot owned by the company.

The total impression given by the session was of an initial victory for the Insurgents. The Regulars had no idea at the beginning of enacting as many important laws as they passed during the closing weeks. Not for a moment, for instance, did they suppose that they would pass a postal-savings act. They did not believe that if they enacted any railroad legislation at all, it would be even as nearly what the people wanted as the law that was finally passed.

But the activity of the Insurgents and the evident advantage that the Democrats would get during the campaign — these influences came to the rescue of the President. But whatever the causes, we may be thankful for the very creditable amount of positive and important legislation, and the President is entitled to much of the credit; for he would have received the burden of the blame if Congress had adjourned without doing much. This is a good list of measures, although some of them are not as satisfactory as they seem:

The Railroad Act, a measure originally drafted by the Attorney-General, but in its final form chiefly a compromise.

The Postal-Savings Bank Act.

The act for the admission of Arizona and New Mexico.

An act authorizing the President to withdraw public lands from entry.

An act to lend the Reclamation Service $20,000,000, which is to be refunded.

The creation of a Bureau of Mines.

Publicity of campaign contributions in Congressional elections *after* the election, not before.

The creation of a commission to inquire into stock and bond issues by railroads.

A commission to secure facts looking toward the making of economies in the Federal Government.

An appropriation to enable the Tariff Board to gather definite facts.

II

By far the most important result of the session was the rising of a sentiment in Congress, in response to a sentiment throughout the country, of independence of party bosses. This sentiment caused the restriction of the Speaker's power and the running battle of the Insurgents in the Senate. It seems to have been the beginning of the end of the system whereby the whole legislative programme is made up in the committee-rooms of the party bosses and forced through the House.

It is hoped that it will mean that the Floor of the House will become more and more a forum for the discussion of public questions instead of a place where, under the lash of a party whip, public business is transacted by the formal ratification of action taken in a party caucus.

In the Senate there was an even more decided revolt against party leaders, although it did not take as dramatic a form as it took in the House.

The most notable speech of the session, and one of the most notable that have been made in Congress for a very long time, was Senator Dolliver's declaration of opposition to the principle of party government in Congress. He declared:

"I notify all parties that I have no intention of leaving the Republican party, even to oblige old and valued friends. Neither do I intend, however brief my public service may be, to sit in this chamber without making an effort, in my own name, to represent my people and to defend their interests, asking no license of any sort, even from the most accommodating political holding companies. . . .

"It is a parody on our form of government to say of a body like this that it shall be governed, not by a majority of its members, but by a majority of the majority party of its membership. There are many who carry the doctrine even further. They say that the majority of the party majority ought to be dominated by a majority of the committee."

The Administration rose in the people's hopes by its burst of eleventh-hour activity, and every patriotic man rejoiced with the President. Mr. Taft strengthened his hold on the people greatly — whether permanently or not, the future will show. But the Insurgents were the real moral victors of the session; and the probability is that their work will now be the strongest single force in shaping the destiny of the Republican party. For it is a moral force.

RAILROAD LEGISLATION BY CONGRESS

THE fiscal year ended June 30th was a year of extraordinary occurrences touching the railroad business. The excitement, most of which fell within the last two months of the fiscal year, culminated on the last day but one — June 29th, when the Interstate Commerce Commission handed down decisions covering six of the most important rate-questions that have come before it, and in every case ordered sweeping reductions of rates.

Other exciting episodes were an attempt by the Western railroads to raise rates; a prompt injunction by the Government against such a raise, with a threat to prosecute the railroads under the Anti-Trust Law for combining to raise rates; and the enactment of a railroad bill that barely escaped being sensational in several of its clauses.

This act provides for the establishment of a Commerce Court, of five judges selected by the Chief-Justice of the Supreme Court from among the Circuit Judges of the country; except that in the first instance the President shall appoint five Circuit Judges who will serve from one to five years respectively. This court is to have jurisdiction over all appeals from decisions of the Interstate Commerce Commission. It does the work which now piles up upon the Circuit Courts of the United States. It is practically an intermediary step between the Interstate Commerce Commission and the Supreme Court of the United States.

There is nothing in this court to which the railroads have any great objection

provided it is manned by good judges and not by politicians. In any case, it is likely to expedite the process of getting a final ruling from the Supreme Court on disputed questions.

Telegraph, telephone, and cable companies —wire and wireless—are brought under the authority of the Interstate Commerce Commission, but under restrictions that rob the provision of any very important meaning.

Another provision limits the right of appeal to Federal Courts from the operation of state laws. This is intended to obviate such controversies as arose in the Southern States two years ago over two-cent fares; but here again there are so many restrictions to the provision that it will probably have little effect in actual practice.

The most important feature of the law is that which gives the Interstate Commerce Commission power to order a hearing on any rate advance without waiting for a shipper to complain. The Commission has the power also to suspend the operation of any new rate published by a railroad for a total period of ten months, if it takes that long to investigate it.

The law also pretends to prohibit railroads from charging more for a short than for a long haul over the same route. This provision, however, which would be indeed revolutionary, if it really meant what it was supposed to mean, is so modified that it may mean nothing at all in practical application.

In the final shape which the bill took when it came out of the conference committee and became a law, it is safe to say it can be almost ignored by the public, the shippers, and the railroads, in so far as its real remedial effect is concerned. Few railroad men are worrying at all about it. The gist of it is that, no matter what the Interstate Commerce Commission may do or think or say there is still access to the Supreme Court, and this act has made it quicker and easier.

The Administration bill, as it was introduced, was a very different measure indeed. It contained clauses providing for a physical valuation of railroads, and for a direct supervision by the Interstate Commerce Commission of stock and bond issues. The railroads are so glad to have escaped from these possibilities that they view with something like indifference the positive enactments of the law.

THE STORY OF SCHEDULE I

THE story of the raising of the duties on cotton goods, when the Aldrich-Payne Act was made, as told in this magazine by Mr. Evans — *that*, Republican and Democratic men and brethren, is the way tariffs have long been made — made by their beneficiaries, made privately, sometimes secretly, sometimes by tricks. The public knew nothing about the tricks whereby this schedule was changed, and had no way to find out. The minority members of the very committees that did the job were kept in ignorance. And after that, even the Senate and the House were overridden by the Conference Committee. The duty was raised on almost everything made of cotton, precisely as the manufacturers wished it raised. Yet the practically universal supposition at the time was that no cotton-goods duties were increased. We have no authority to speak for the President, but surely he could hardly have known this story when he defended the act. For, if this kind of legislation is defensible, what is indefensible?

This amazing story does not stand alone. That is the way tariffs have been made for forty years or more. But there is this difference: We are at last coming into a state of mind that regards this practice as a fraud on the public. There is nothing baser or more bare-faced in the long annals of law-making for private interests and in underhand ways of government.

This was not a question of Protection *versus* Free Trade, for there was no contention for free trade in cotton goods. It was a question of making a law for the interests of the people or for the interests of a group of manufacturers. It was a question of making a law openly and frankly or of making it by indirection and stealth.

The American people will not much longer "stand for" this sort of thing; and there is no better time than during this Congressional campaign for them to say so.

II

One way to end this kind of tariff legislation—and to laymen it looks like a

good way—is to have every schedule studied scientifically by a well-trained, non-partisan, permanent tariff board and to have its conclusions made public. The providing of money by Congress to enable such work to be done was one of the President's belated but real triumphs.

"PORK-BARREL" REVENGE

I ONCE reached the conclusion that it was my duty to interpose a veto in order, if possible, to secure a change in the method of framing these bills," said President Taft to Congress in a memorandum on the Rivers and Harbors Bill which he reluctantly signed after the full ten days' delay which the law allows.

In this number of THE WORLD'S WORK Mr. Fuller explains how these bills are made up of expenditures for hundreds of unrelated and often useless "improvements" spread broadcast over the land as "sops" to Congressional districts; and how Congressmen trade and traffic in them at the behest of their constituencies. The accompanying map shows the 296 Congressional districts which received "sop," and the 95 which did not — a 95 consisting chiefly of mountains and desert.

This "pork-barrel" has long been a recognized instrument of depravity, no more to be questioned than private pension bills or any of the other forms of bounty by which a political machine may be kept in good working order.

But these are days of a somewhat closer scrutiny of expenditure, of some sense of accountability to the public rather than wholly to party organization.

Senator Burton, for many years chairman of the Rivers and Harbors Committee in the House, laid bare the iniquities of the measure passed this year. He knew the facts. There was no answer to his censure. But there was retaliation. He is chairman of the National Waterways Commission, which is preparing a plan to use the rivers of the nation from source to mouth to serve for water-supply, water-power, and navigation — a plan which will treat drainage systems as a whole as nature made them, and which will not spend money as "sop," but only on useful projects. His colleagues listened to Mr. Burton's attack on the "pork-barrel" in silence—and then withheld the appropriation for the continuance of the Waterways Commission!

SENATORS FROM WASTE PLACES

BY THE last census, the Territory of Arizona had nearly as many people within its wide borders as Allegheny, Pa., which is a manufacturing city on the outskirts of Pittsburg. Presumably the newly elected state still has approximately as many people as the Pittsburg suburb. Anyway, two years ago, 26,356 votes were polled in the territory, which is within about 4,000 of the number polled in Berks County, Pa., or nearly as many votes as Mr. Taft received in the Democratic county of Jackson, Mo.

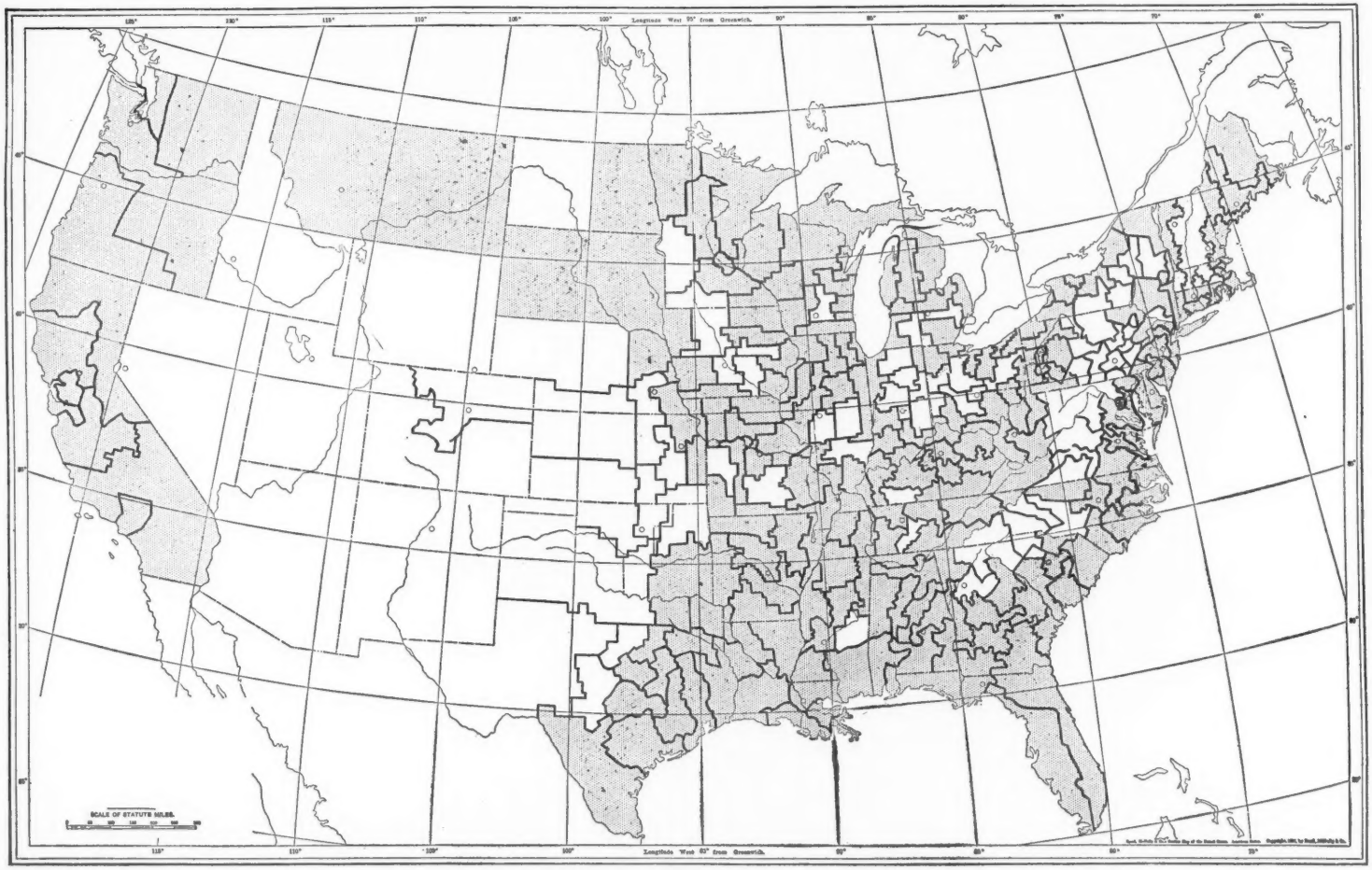
It is true that rich crops are grown in the valley of the Salt River, that the mining industry has collected five or ten thousand people at Prescott, at Tucson, and at Bisbee, and that these are permanent, well-ordered cities. As one Eastern magazine editor said:

"I would rather send my children to the public schools of Prescott, Arizona, than to most of those in New York."

He has followed this opinion with action, and he is one of the several thousand people who have gone to Arizona in the last few years. These people are satisfied, for Arizona presents good opportunities for a limited number.

There are two transcontinental railroads across Arizona, cattle and sheep on the ranges, forests on the hills, and the Grand Cañon of the Colorado as a scenic asset in the northern part of the state. But even with all these things in the energetic hands of its 26,000 voters, Arizona will long be a sparsely settled country. The irrigable area is limited, there are no favorable conditions for large manufacturing, no strategic points that compel commerce, nothing to entice a large population, and no way to support one.

As an offence against truly representative government, there is little difference between sending a Member to the British Parliament to represent a "rotten borough" whose population had decreased to insignificance, and sending four Senators to Washington to represent states whose population has



THE DISTRIBUTION OF THE "PORK"

The shaded portions of the map show the Congressional districts in which Congress at its last session authorized expenditures for river and harbor improvements. Of the 391 districts in the country, 296 received something in this one bill

never reached significant proportions. Senators and the Members of the House represent people, not square-miles of territory; and to give two Senators and one Representative to the 25,000 or 30,000 voters in Arizona is an injustice to practically all the rest of the population, and a special privilege to those particular people.

New Mexico, the other new state, is in much the same position. Governor Curry estimated the population at 450,000, although so conservative an authority as a railroad circular, advertising opportunities along its lines, says that "this may overstate it somewhat," and prefers to place the 450,000 in the future safely out of reach of statistical denial.

Mining, which is the largest industry in this new state, produces $7,000,000 worth of minerals a year, or nearly one-fifth the business of an Eastern biscuit company.

But New Mexico also can muster imposing figures of the mileage of the transcontinental railroads that cross its borders to get to the Pacific. It can show millions of acres of land, and point with pride to cattle, sheep, and timber. But neither mining, lumbering, nor grazing fosters a thick population. The multifarious activities of Indiana are as impossible in New Mexico as is the commerce of New Orleans or San Francisco. Apparently also there is some doubt about the character of the population of New Mexico, from a third to a half of which is Mexican or Indian. Though there has not been much outspoken objection to its sending two Senators to help govern the United States, the Arizonans, its nearest neighbors, emphatically protested against being yoked with New Mexico in joint statehood.

We have added four new Senators to Congress to represent a possible 100,000 voters — and these waste places.

THE AMERICAN HOUSE OF LORDS

MR. THOMAS F. RYAN, sailing away to Europe and Africa in June, left this as part of his valedictory to the American people:

"I firmly believe that such men as Messrs. J. Pierpont Morgan, Jr., Henry P. Davison, Otto H. Kahn, Mortimer L. Schiff, John B. Dennis, George F. Baker, Jr., and James Stillman, Jr., may be relied upon to take care of the great banking and financial interests which lie at the foundation of American business."

The two first-named gentlemen are members of the firm of J. P. Morgan & Co.; the second two, members of Kuhn, Loeb & Co.; and the last two are the sons of the chairmen of the First National Bank and the National City Bank of New York, respectively. Mr. Dennis represents the old banking-house of Blair & Co.

When a business genius of the rank of Mr. Ryan says that the American business world of to-morrow is to rely for its salvation upon a group of young men who have inherited great power rather than carved out each his separate empire for himself, he states a thing that is startling in its hidden meaning. For never in the history of this nation has any commercial generation leaned upon the shoulders of men who inherited power.

It has been the peculiar boast of the American people that in every generation and in every walk of life it chose its own leaders, singling them out from the mass of men for the performance of the task in hand. The choice fell now upon the son of a poverty-ridden farmer chosen to lead the nation in its greatest battle against an old-world institution, chattel slavery; and now, again, upon the son of a destitute clergyman from the flats of New Jersey, picked out by destiny to become the arbiter of railroad power in this land. Again, for the banking world it called a Morgan from the moderate luxury and measured wealth of a middle-class banker's home; a Stillman from a hut beside the Rio Grande in Texas; a Baker from the plain, bare desk of a little, up-state bank. In the industrial world, it made its Ryans, its Havemeyers, its Carnegies, and its Rockefellers from pretty raw material.

In a sentence, Mr. Ryan sweeps away this one American tradition, and entrusts to the sons of mighty wealth the making of commercial America to-morrow. It may be true, in the banking world, in the industrial world, in the railroad world, and in the commercial world that we have evolved a law of entail; but even Mr. Ryan and the gentlemen he names will probably pardon the people of America if they frankly doubt it. Power may be passed down from gen-

eration to generation — so much is granted. Whether or not the second generation holds it very long depends upon that second generation. The pages of to-morrow's commercial history have not yet gone to press.

MORE BANKING CONCENTRATION

TWO big banks of Chicago, the Continental and the Commercial National, have been consolidated under the name of the Continental-Commercial National Bank, which has a capital of $20,000,000. Considered by itself, this is merely a news item of no very startling national interest.

It is a matter of real significance, however, in that it is simply part of the strong movement for the concentration of banking power that is going on all over the United States. This concentration, in the case of the New York banks, has been noted several times during the past year; in fact, ever since the panic of 1907. The banking triumvirate — Messrs. Morgan, Baker, and Stillman — has been organizing more closely and more efficiently the banking power over which it formerly exercised a loose and somewhat inefficient domination.

The spread of the movement to Chicago was expected. Nobody will say that Messrs. Morgan, Stillman, and Baker control the new Chicago consolidated bank; but one cannot read its list of directors without realizing that in all human probability this bank in any national financial crisis would stand hand in hand with the great banks of New York.

The president of the new bank is Mr. George M. Reynolds, a comparatively young man of really extraordinary attainments. He came, only a few years ago, from a "country bank" in Iowa to make his fortune in Chicago. His career is almost exactly parallel to that of Mr. H. P. Davison save that Mr. Davison reached his goal as a partner of J. P. Morgan & Company, while Mr. Reynolds finds himself the head of the greatest commercial banking consolidation outside of New York.

THE TIME TO STRENGTHEN ONE'S CREDIT

IN THREE small towns of New Jersey a single automobile company holds mortgages on fifty-four houses owned by people of the middle-class. These mortgages were given in part payment for automobiles purchased by the owners of the houses.

In the West and the South the flood of mortgages on farm-lands grew so great that, in the early summer, the strong banks of the West determined to put a check upon the borrowing, lest it reach a point where the demand for money for such purposes would constitute a national danger to the commercial world.

In the last two years the building operations in our hundred greatest cities surpassed all records of our history. The demand for money on mortgage for such uses was enormous. It is estimated that there are more mortgages, debentures, bonds, and stocks outstanding to-day upon the higher class of city buildings in this country than ever before. Hardly a week passes in the great cities without the flotation of a new company to finance such operations by one form of security or another.

The flood of railroad securities has not abated. Our own market was glutted and overflowed early in the year; and only the providential intervention of French bankers saved the investment world from a very bad attack of what Mr. Morgan called "indigestion."

These simple facts all mean one thing. The working capital of the nation has been converted into fixed forms of capital faster, perhaps, than ever before. Even the luxuries of the middle-class, normally paid for out of the pocket or the till, have been to a quite remarkable extent converted into fixed obligations, upon which interest must be paid.

It is a time of great and widespread wealth and prosperity. The gross receipts of the average American are very high indeed; and he has never felt much more prosperous. He feels himself able to carry a burden of debt with comfort — and he straightway assumes the debt, believing that he will be able to pay principal and interest out of excess profits and expansion of revenues between now and the day it is due.

At such a time it is well for the prudent man to take stock and inventory of his own affairs. For mankind, after all, is something like a family. The debts of the weaker brother have to be paid by somebody. Even though the merchant, the manufacturer, and the jobber have contracted

no overwhelming debts themselves, they may, if they are not careful, be engulfed in the debts of others. For their customers, upon whose payments their own solidity is based, may be of those who have overreached themselves in business, in land speculation, in building operations, or in the sweet pursuit of luxury and pleasure.

There is no apparent reason for alarm; but there is excellent reason for caution. Not without cause does such a man as Mr. J. J. Hill, who has weathered one great panic at least, warn his employees to lay up store against a rainy day. Not without cause do country bankers, East and West, tell their best customers to build up credit as best they may against the coming business-year. It is no idle, chance occasion that brings the banking officers of nearly all our great railroads at one time together into the banking-rooms of Paris, seeking loans for greater or for lesser periods. The corporation is a person of many minds, and most of these minds are trained to be barometers of the weather of commerce. The individual is blind who ignores the judgment of the great corporations. It is a time to mend walls and build bastions.

REVIVING AN ANCIENT CUSTOM

THE Mayor of New York made the address this year before the graduating class of the College of the City of New York. Mr. Gaynor is an arresting phenomenon in American life — a philosopher whose mind is saturated with Roman and Hellenic thought, and at the same time a very practical man who has spent thirty-five years in laboring for his city. He spoke of civic patriotism, and with such effect that a few days later the class assembled and determined to revive and subscribe to the ancient Ephebic oath — the sacred vow made by the youths of Athens when admitted to the first duties of citizenship.

Here is the oath, and certainly it is as pertinent on the lips of a young American to-day as on those of a young man in the city by the Acropolis twenty centuries ago. Only it must be remembered that to the ancient Greek the "city" meant also the nation.

"We will never bring disgrace to this our city by any act of dishonesty or cowardice, nor ever desert our suffering comrades in the ranks; we will fight for the ideals and sacred things of the city, both alone and with many; we will revere and obey the city's laws, and do our best to incite a like respect and reverence in those above us who are prone to annul and set them at naught; we will strive unceasingly to quicken the public's sense of civic duty; that thus, in all these ways, we will transmit this city not only not less, but greater, better, and more beautiful than it was transmitted to us."

THE GENTLE FLATTERY OF LEARNING

HONORARY college-degrees do please men. If one could speak about such a subject with cold-blooded frankness, it might be said that they please men, both great and small, immoderately. Mr. J. P. Morgan hurries home from Europe to become a doctor of laws at Harvard; Mr. J. J. Hill delays his annual journey to the salmon waters to receive the same distinction at Yale; Mr. John Burroughs wears a master's gown on the same day — all pleased. Yet what on earth Master Burroughs or Doctor Hill or Doctor Morgan will do with his title, it would be hard to say. Neither Mr. Burroughs nor Mr. Hill needs his on the title-pages of his books, and Mr. Morgan hasn't yet written books.

The wicked find sinister suggestions in the bestowal of such honors, which is a superfluity of suspicion, undeserved. For the true measure of these pleasing compliments is the simple one — the college likes to keep alive its privilege of patronizing achievement, and men of achievement like the approval even of the impractical men of learning whom they sometimes affect to pity or to despise. Each plays a game, not always quite sincere; but it is a part of the joyful mood, not too serious, with which the college year ends. To inquire too closely into the hopes and the hints and the emotions of such occasions would be most ungracious. Let us take some things at their face values and write "Dr. Morgan" and "Dr. Hill" to-day, even if the titles be forgotten to-morrow.

THE ENGLISH POLITICAL SITUATION

WHEN King Edward died the English Unionists raised the cry, "A Truce of God!" imploring the Liberal Government to stop the onslaught against the

House of Lords until the dead monarch could be buried and the new King crowned — some time within the next two years. And so adroitly did they appeal to the susceptibilities of the English people, so lustily did they wave the properties of monarchy, that the country went into a veritable debauch of sentimentality. To a sane visitor, London, at all events, looked and behaved as a mediaeval town sunk in the maudlin superstition of king-worship.

So complete was the momentary recrudescence of mediaevalism that no one in London two months ago believed the Radicals would, for a year at least, dare to raise the question of the House of Lords or to "embarrass" the new King by asking him to create the Liberal peers necessary to reform the aristocratic chamber.

The "Truce of God" was of very short duration. The English are a people easily excited (the general opinion to the contrary notwithstanding), but they are amazingly sensible when the excitement passes. Already the situation is precisely what it was before the death of King Edward. The Liberals recognized the transitory sympathy with the old order to this extent only — they went into what was bound to be a fruitless conference with the Conservative leaders. They will now resume the course marked out in the spring. Parliament will meet again in the autumn, the House of Lords will refuse to accept the resolutions of the Commons curtailing the Lords' right of veto, and the issue will be fought out before the country in a general election early next year.

MEXICO'S CENTENNIAL

ON SEPTEMBER 15th Mexico will begin to celebrate the centennial of its independence. The date which our southern neighbor especially commemorates corresponds rather to our Battle of Lexington than to Independence Day. It was on the fifteenth of September, 1810, that Don Miguel Hidalgo y Costilla, priest of the parish Dolores, in Guanajuato, put himself at the head of the patriotic crusade which eleven years later, after many bloody battles, resulted in the abandonment by Spain of the land which Cortez had won for the Castilian crown.

Citizens of our own fortunate land may be moved to inquire what Mexicans have to rejoice over in the history of their hundred years' existence as a separate people. History moves faster in the North than in the tropics, and the astonishing progress made during the first century of our Republic has not been duplicated by our southern neighbor. Yet there has been progress in Mexico, very great progress indeed. The country now enjoys a very considerable degree of prosperity; life in the main is safe; property is respected, and industrial and commercial opportunities are opening on every side. The land is swarmed by a horde of pauper peasantry, but within the last generation something like a middle class has developed, and there is now a feeling that the attention of the government and of the wealthy should be directed toward the elevation of the submerged mass of the people. The country scarcely enjoys what we should call freedom: a republic in name, it is in fact a monarchy. But under the rule of Porfirio Diaz, which has now lasted for thirty-three years, the advantages of stable government have been demonstrated, and there is good prospect that the country will refuse to return to the political chaos which marked its first two-thirds of a century, and which still obtains throughout Central America.

President Diaz has just had himself reëlected for another term of seven years. He is now eighty years old. Those who know him declare him to be still vigorous both physically and mentally. The chances are against his surviving for seven years, and the succession is secured in the person of Vice-President Corral, a man who has shown his ability as a civil administrator, though not as a fighter. The new Vice-President is neither a romantic nor a popular figure, but he is Diaz's choice and Diaz may be trusted to know what his country needs.

The special embassy which President Taft is sending to Mexico for the occasion has much cause to express the gratitude of our Government to the Government of Mexico, for it is no small thing to have for a next-door neighbor a stable government even of such a character as that which President Diaz has given Mexico.

A LESSON FROM THE TROPICS

AS THE work of cutting the canal goes on at Panama without controversy and at good speed under the army engineers, all who come from the Isthmus bear testimony to the continued good health of every class of workers. Nothing more remarkable has been done in our time than the turning of this pest-hole into a region of healthful residence. The far-reaching value of this sanitary revolution is not yet appreciated. It points not only to the possibility of such development of the tropics as we have not hitherto dreamed of, but, more important than that, it points to the incalculable lengthening and strengthening of human life in the temperate regions of our own continental area.

We have in Panama a system of rigid compulsory sanitation. Health is under military control. There can be no mosquitoes. Flies are almost exterminated. Other harmful insects are destroyed or kept within control. The water-supply is guarded. Prevention of disease is enforced, and immediate medical attention is made compulsory as soon as any physical trouble occurs.

We would not tolerate and we do not need a military system of sanitation in the United States; but we shall constantly approach military rigidity in enforcing sanitary laws as our city governments become more efficient; for public opinion, as it becomes better informed, will become alert and severe — with what gain no man can calculate. For instance, the other day a robust-looking man presented himself at a hospital in New York.

"Nothing ails me," he said, "but a little cough that I sometimes have. But a district nurse who comes to see a woman that lives on the floor below me heard me cough and told me to come here. Nothing's the matter, I guess; but I thought I'd come and report without giving more trouble about it." He had incipient tuberculosis. He was compelled to submit to treatment and in good time. It is by this method that New York City is making long strides toward ultimate freedom from the most wide-spread of the fatal diseases.

The systematic work that has been begun in the Southern States to eradicate hookworm disease gives promise of a new kind of public opinion and ultimately of a new code of sanitary laws in the open country. When we learn thoroughly that mosquitoes and flies and soil-infection and water-infection are more fatal than war, public opinion will begin to enforce sanitation. The truth is that the lives and the treasure lost in wars for a century are negligible in comparison with the loss of life and consequently of wealth that is caused by preventable diseases in any decade. All the warships in all the world since the first fighting-boat was launched by savages have killed one man perhaps to every thousand persons that have been killed by house-flies. And in many of our cities now it is true that "it is more perilous to be a baby than it is to have smallpox." That is to say, the percentage of infants that die is larger than the percentage of smallpox victims that die.

The sanitary lesson to be learned from our experience in Panama, if we would profit by it to the utmost, would be worth more than the canal.

HELP IN HOME TEACHING

GREAT as has been the vogue of the correspondence school, it had not been supposed that young children could successfully be taught by it. But the Calvert School, in Baltimore, which successfully teaches children between six and twelve, has worked out a plan of extending its work to absentee pupils — children who from parental choice or necessity stay at home.

Under its system, the child is enrolled in the class (determined by a test examination) for which he seems ready, and is then carried on precisely as if he were present in school. After a letter of general instruction to the parent or home teacher has been sent, together with the necessary class-books and materials, there follows every week a package of five daily, simple and practical lesson-outlines.

Every twentieth lesson is a written and oral test. This affords the teacher at the school an opportunity to criticize the home work and to offer suggestions to the home teacher. One hundred and sixty lessons constitute a school year. Six years' work is provided for.

Mr. V. M. Hillyer, the head of the Calvert

School, believes that little is required of the home teacher beyond common intelligence. "The detailed lessons supplied furnish the matter to be taught, with instructions for presenting it in the best way. The home teacher does not have to concern herself with the sciences of pedagogy, psychology, and child-study, or with any of the many and various theories of education. The school's teachers do that for her. They digest all the theories and make the practical applications, so that the home teacher has only to follow simple directions, resting assured that those directions have their basis in the best modern thought and theories."

The Calvert teachers even believe that the child thus taught at home has advantages over the school pupil. He may go fast or slow, as his ability enables or circumstances necessitate. If he falls sick, his class does not leave him behind. He enjoys the undivided attention of his parents or home tutor.

Mr. Hillyer will lay this system before the Third International Congress for Home Education at Brussels this summer, and will suggest the feasibility of state schools for the home instruction of children. He seems to have worked out a practical plan of correcting an incalculable misfortune — the misfortune that many even intelligent parents have of believing that they cannot themselves teach their children. They regard "education," not as their work, but as the work wholly of the school.

OUT OF UTOPIA

FROM Vancouver, B. C., some time ago, came this refreshing item:

> Because Dan McIsaacs, a Nova Scotian, had been off of a farm only twice in his life, and appeared absolutely ignorant of the code of ethics connected with other people's property, he was let off by the police magistrate to-day on a charge of stealing.
>
> McIsaacs had taken goods from a counter of a dry-goods store and told the court that he was ignorant of any wrong-doing, which a police inspector corroborated. Upon returning the articles and promising to abstain from such theft again, McIsaacs was dismissed.

Here we have a glimpse of an idyllic land of rustic innocence where all is altruism, where no idea of property, no pride of possession, nor covetousness of others finds a place. In Dan McIsaacs's world, as in the imagined realms of Sir Thomas More and William Morris, anybody might take anything he wished without the thought that anybody else might object. This happy state seems to have existed on the Nova Scotia farm from which the innocent Dan came. How he got to Vancouver, 4,000 miles away, is not told, but once in British Columbia, he learned that the serpent had entered Eden and that a man might not even lift a package from a dry-goods counter without arousing the interest of a policeman.

This innocent rustic doubtless seems to the unthinking reader a mere fool. But he is akin on one side to a certain class of so-called Socialists who would abolish private property — an admirable and convenient scheme if everybody would produce all that he could for the common good; and he is akin on the other side to the predatory trusts that would take the earth and the fulness thereof because they can manage it better than we. For these also disregard others' ownership of things — so far as law and custom permit; and law and custom have in many cases been as indulgent as the police magistrate at Vancouver.

One of the tragedies of our time is, that some of the great trusts, "ignorant of the code of ethics connected with other people's property," are now waking up to the rudeness of a world that has policemen for its protection. The very simple and the very shrewd have a somewhat common philosophy of property; and till we come nearer the millenium the rest of us must be pardoned for holding a different view.

HOW TO KILL FLIES

THE house-fly, let us hope, is doomed; and by its extinction, if we ever accomplish it, we shall gain an expectation of two years more of life. That is to say, the average of human life would — it is calculated — be two years longer if this disease-carrier were wholly obliterated.

Of the increasing volume of good literature on the subject, there is nothing better than these practical rules given in a bulletin published by the Fly-Fighting Committee of the American Civic Association of Washington. Other bulletins and books and

articles have aroused our fears, but this one opens a practical way of escape.

"The house-fly breeds in horse-manure, kitchen offal, and the like. Dispose of these in such a way that the fly cannot propagate.

"Screen all windows and doors and insist that your grocer, butcher, baker, and every one from whom you buy food-stuffs does the same.

"There is more health in a well-screened house than in many a doctor's visit.

"After you have cleaned up your own premises inspect the neighborhood for fly-breeding places. Call the attention of the owner to them and if he does not remove them, complain to the board of health.

"Not less than 95 per cent. of the pests are bred in the stable.

"All stables should have a manure-bin with a door at the side and a wire screen on the top, that the larva deposited in the manure before it was placed in the bin will be screened when hatched, and as flies seek light and come to the top of the bin they can be easily killed by burning paper or some other device.

"The fly has a thirst equaled only by his hunger; place a dish of poisoned water in the stable and a greater part of the flies hatched there will be killed.

"Wherever absolute cleanliness prevails there will be no flies. Look after the garbage cans See that they are cleaned, sprinkled with lime or kerosene oil, and closely covered.

"Remove all manure from stables every three or four days, and when removed keep in a tight pit or vault, so flies cannot breed in it. Lye, chloride of lime, or blue vitriol water, crude carbolic acid, or any kind of disinfectant may be used.

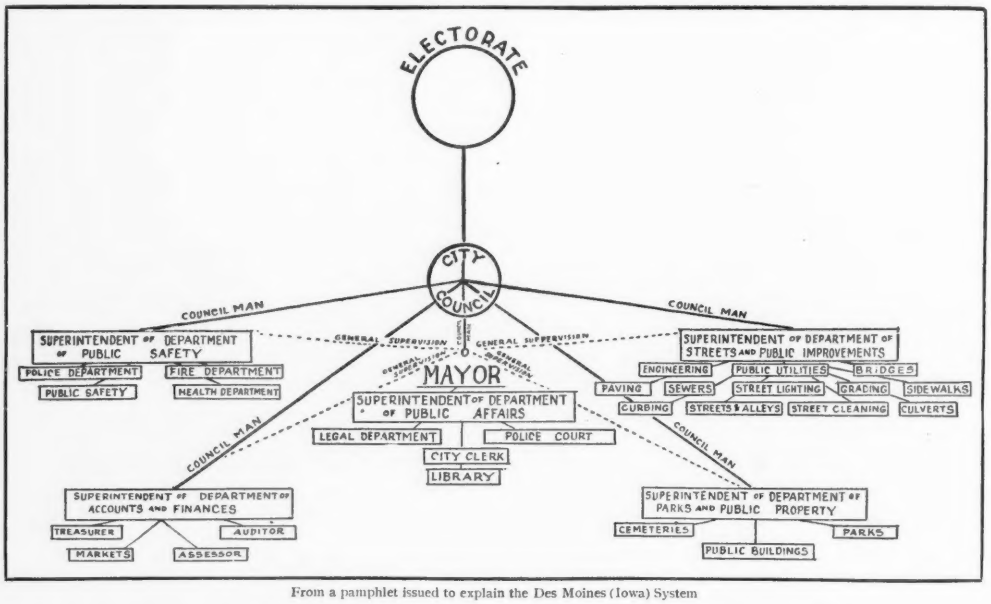
"To clear rooms of flies carbolic acid may be used as follows: Heat a shovel or any similar article and drop thereon twenty drops of carbolic acid. The vapor kills the flies.

"A cheap and perfectly reliable fly-poison, one which is not dangerous to human life, is bichromate of potash in solution. Dissolve one dram, which can be bought at any drug-store, in two ounces of water, and add a little sugar. Put some of this solution in shallow dishes, and distribute them about the house.

"A spoonful of formalin or formaldehyde in water, put into a quarter of a pint of water and exposed in the room, will be enough to kill all the flies.

"To quickly clear the room where there are many flies, burn pyrethrum powder in the room. This stupefies the flies and they may be swept up and burned.

"If there are flies in the dining room of your hotel, restaurant, or boarding house, complain to the proprietor that the premises are not clean."



From a pamphlet issued to explain the Des Moines (Iowa) System

HOW THE COMMISSION PLAN OF CITY GOVERNMENT WORKS

There are only five elective offices, and the men who fill them are directly responsible to the people for their several departments

RAISING GAME FOR PROFIT

DEER, elk, and even moose can be bred profitably for food in the United States. So good were the results got by a few rich men who began simply to stock their private game preserves that the United States Department of Agriculture is trying to encourage them on a commercial basis. The Biological Survey has issued bulletins on the raising of deer for profit and has a series in preparation on the domestication of other game-animals on lands not good for other uses.

Forty deer can live on land that will support one steer, and the deer require less expensive food and less care. They thrive best on coarse grasses, leaves, mosses, and other vegetation that cattle will not eat.

It is estimated that in the states east of the Mississippi River, not counting Florida or the Gulf States, more than a million dollars' worth of venison was consumed last year; and it is believed that deer-raising can be made a profitable industry on millions of acres of cut-over forest lands and other waste lands in the West and Southwest that are now useless. If deer-raising should become general many state game-laws would have to be changed. For not even the owner of deer may kill his own animals except in open season, in most states, and in many he is even then limited to the killing of two a season. More than half the states absolutely forbid the sale of venison and some forbid the sale of venison produced within their borders. But a number of states have recently modified their laws to permit the killing and sale, under regulation, of deer raised on private preserves. The Biological Survey believes that proper legislation to encourage the raising of deer would soon make venison as common and as cheap as mutton.

"WHEN NOBODY WANTS TO BUY"

ONE day in June, the junior member of a well-known bond house in Wall Street sat looking out of the window of his office, watching the shipping down the Bay. It was the most profitable thing that he could find to do. He had just finished reading a novel, and was wondering whether he would come to business next day or go out to the country and play golf. He had just reached the melancholy conclusion that it would pay better to play golf, if the rain would only stop.

The office-boy brought in a card, bearing the name of a man and his address, a town up-state in New York.

"He says he wants to buy bonds," said the boy, "but he did not know whom he wanted to see."

Collecting himself after the shock, the junior partner so far forgot himself as to follow the boy to the rail of the customers' room. An old man stood beside it, holding a yellow, leather "grip."

In answer to an invitation to come in and sit down, the old man came into the inner office with the junior partner, who introduced himself.

"I came down to buy some bonds," said he.

"Yes. Well, do you have any particular bonds in mind? Have you seen any offerings that you like? I don't believe you ever dealt with us before, did you?"

The junior partner was puzzled. He had not quite recovered from the shock of finding somebody who said that he wanted to buy anything.

"No," said the old man, "I never did. I have always dealt with Blank & Co., but the man I knew and trusted in that firm died six months ago, so I thought I would move. I have investigated your house, and I like your record."

The banker quietly looked his visitor over, with curiosity. When you tell a banker that he has been investigated he is always at least mildly curious as to results. The scrutiny revealed nothing.

"And about how much would you like to buy?" he asked, figuring that here was

the first outlying scout of the army of "small investors" that, the papers said, was on the march to the rescue of the moribund market in Wall Street.

"I reckon about two hundred thousand dollars," said the old man, quietly.

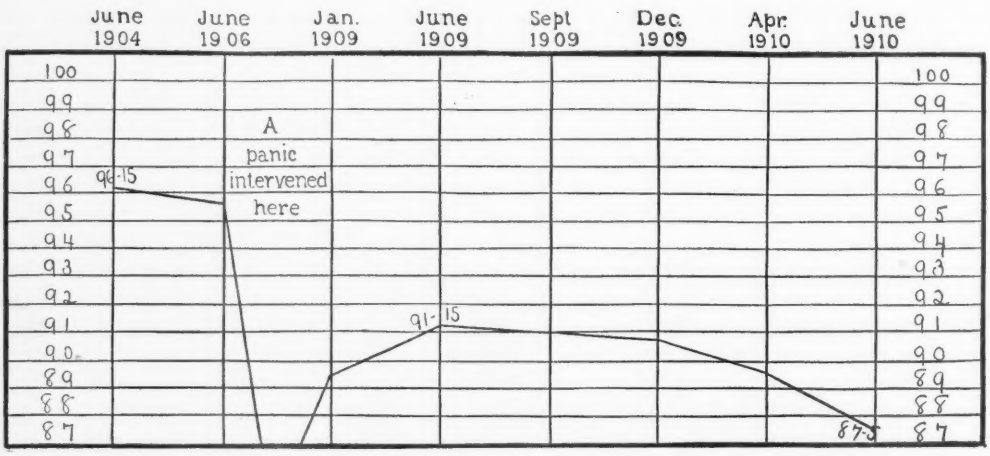
Before the junior partner could make up his mind to reach for the telephone and call the police, the old man had opened his satchel and begun to pull from it rolls of bills with white bands around them. The pile of bundles grew. On top of them, finally, he laid a check. The junior partner picked it up and glanced at it long enough to see that it was a cashier's check for $120.000 drawn by a New York bank in favor of the man whose card he had.

"Young man," he said, "I've been in the law business for nearly forty years in the same place, and every second man that dies in my county puts me in his will as executor. I always come in to buy in person, and I won't do business in a crowded office."

The junior partner looked out into his customers' room, and saw the point.

The thing that old man knew is the secret of successful scientific investment on a conservative basis.

He had to be conservative, because his record of forty years, the capacity in which he served his neighbors, and his own personal honor demanded it. He had to be scientific, or he would have become, long



THE AVERAGE PRICE OF TWELVE SELECTED BONDS FROM 1904 TO 1910

With the pile of money between them, the two got down to business. It took the rest of the afternoon to get the order on the books; and the junior partner learned before he got through that there was at least one customer in the world who knew what he wanted. The list, as he scanned it afterward, included the names of thirty-one separate bonds and four guaranteed stocks.

The gist of this tale lies in an answer that the old man made to a question which the junior partner asked him during the afternoon.

"Why do you make this investment now? You seem to have liquidated all these estate-investments a year ago. Why do you reinvest now?"

since, simply one of the army of lawyers looking for country clients. And he had to be successful — for so, alone, may one grow rich and powerful.

This same secret, the secret of the time to buy and the time to sell, underlies all business, whether it be in wheat, or sugar, or cloth, or bonds.

The time to buy is when nobody else wants to buy, and when the public is selling. If a man has decided to buy a home, has accumulated a certain amount of money in the bank, and feels reasonably certain of his ability to carry through any obligations that he will have to incur, he usually awaits the time when prices are "a little bit off the top." Whenever there is a decided slump in the prices of property in good

residence-sections around New York, for instance, the real-estate men know that there will be a procession of wise men seeking homes.

Very few of the private buyers of investment securities, on the contrary, await the call of real opportunity. When they have funds in the bank, they do not like to wait. The investment buying is most eager when prices are highest, and falls off decidedly when prices are low.

There are many good reasons for this. One of them is the fact that, when prices are breaking, the conservative dealers in bonds and other standard securities are apt to run out of goods, so to speak. They do not buy large quantities of standard bonds. They stay out of the market and wait for the lowest prices. Consequently, at times when bond prices are low, the dealers are not pushing their wares to any great extent.

If you study the financial papers where good investments are advertised, you will find that during periods of high prices and booming markets the volume of investment advertising is very great; while in periods of low prices for the standard bonds, the advertising is light. Instead of large offerings of specific bonds, the dealers run a little card stating that they are in the banking business.

This is not a criticism of the methods of the bankers. Their method is sound business. In the financial papers, they advertise mostly to gain new clients of the larger class — savings banks, trust companies, etc. These institutions buy only when they have funds, and they have funds, usually, when the money market is easy — that is, when money is lending at low rates, and consequently when stock and bond prices are high.

I had occasion, in June, to go through the lists of half a dozen of the large bond houses in New York, looking for a certain class of bonds. These lists were, at that time, the lightest that I have ever seen. That means that these standard houses owned less bonds, of fewer varieties, than at any other time when it was my privilege to search through them. In the offices they talked of "stagnation," of the "dead market," of "public indifference." They were selling, from time to time, small lots of bonds to private investors; but the business was so scattered as to be negligible.

One could hardly help but think, in the light of this fact, that the education of the public in the art of buying investments has hardly begun. For, in comparison with a year ago, for instance, or in comparison with the end of 1906 or the summer of 1904, or any other period of great public demand for good investments, the prices this summer have been almost bargain prices.

It seems lamentably true that the investing public is an institution designed and patented to buy securities only when they are too high in price for any one with skill and science to buy them.

"The public will not buy when bonds are cheap," is almost an axiom in Wall Street.

It is too true. At times when the standard securities, particularly high-class corporation bonds, are cheap, the public follows strange gods. It flocks into "get-rich-quick" games. This last summer was a rich harvest-time for the swindling promoters, the thieves of the wireless, the apostles of prospective, wonderful mining gambles in Cobalt or in Colorado, the vultures who sell the stocks of new inventions to widows, orphans, and clergymen. New hydro-electric bonds of the most speculative class, new irrigation issues, new real-estate companies designed to bring to the promoters the funds that the banks had refused — these and a hundred other false gods lured the minds of the public from the field of sound investment.

The chart that runs in this article is a mere sketch to focus on the mind the relative position of the bond market at the time this is written, as compared with other periods. It shows the average price of twelve selected bonds, representing five different classes of bonds ranging from the most gilt-edged to the speculative industrials, but all of the kind that the investing public buys. The two periods marked 1904 and 1906 and the prices in the summer of 1909 were periods when the public was buying.

When you have looked at it long enough to find out just what it means, ask yourself whether you are one of the foolish public or one of the wise.

C. M. K.

WHAT IF YOUR HOUSE BURNS DOWN?

EVERY American thinks that he knows two fundamental things about fire insurance: first, that he must have it; second, that he must pay more for it than the citizen of any country in Europe. To the first item of knowledge he is reconciled, but against the second he is in constant revolt. He has often seen figures that tell him that the fire-loss here is very much higher than in other countries; but he is firmly convinced that these figures are prepared by the fire-insurance companies, as a basis for charging higher rates.

Now comes the Government of the United States with an official report upon this subject. Its figures are gathered by its own consuls, clerks, and committees. Presumably the Government is not trying to boom the fire-insurance business. Its figures, therefore, may be worth noting.

One of the most interesting comparisons made in the report concerns the fire-loss in cities of various sizes. For comparison, the compilers of the report received statistics from the Geological Survey and the Bureau of Manufactures, and selected ten American cities of various classes and ten foreign cities of equal size. This table is here rearranged to bring out the contrast. Each American city in the list stands opposite a foreign city of about the same size and presumably of about the same property value. These figures are 1or the year 1904. Lest it seem that the Government chose the worst of the American cities and the best of the European, the total figures of all cities of various sizes are also compiled. They show that in cities of 300,000 or more the American loss is $2.24 per person, while in similar European cities the loss is 65 cents. Yet the average cost of fire-protection to each citizen in an American city is $1.53 a year, while his counterpart in Europe pays 20 cents.

The unpleasant fact is that the American citizen pays seven times as much every year for his protection from fire and suffers a loss that averages five times as much as the loss in Europe.

The main cause, of course, is that here we build of wood, while in Europe they build of brick and stone and stucco. The second great cause is faulty building. The government report h'nts at a spirit of carelessness even among the municipal officers who supervise building and fire-protection.

Let the causes be as they may, remediable or not, the fact remains the same — that not since 1882 has there been a year in which the fire-loss has not run over $100,000,000 in this country. In thirty-three years the actual waste directly through fire has reached a total of $4,485,000,000. In addition to that, at least an equal amount

FIRE LOSSES IN FOREIGN AND AMERICAN CITIES

American	*Loss*	*Per Capita*	*Per Capita*	*Loss*	*Foreign*
Chicago	$3,937,105	$1.43	$0.47	$1,266,282	Paris
Cincinnati	1,971,217	5.70	.31	99,492	Frankfort
Philadelphia	2,093,522	1.45	1.42	2,128,541	St. Petersburg
Baltimore	916,603	1.66	.41	226,506	Birmingham (Eng.)
Cleveland	515,194	1.12	.18	75,989	Sheffield
Atlanta	225,237	2.15	.55	55,391	Toulon
St. Paul	522,447	2.56	.38	78,372	Bremen
Evansville	196,702	3.08	1.67	106,150	Molenbeck
Oshkosh	80,500	2.59	.72	22,349	Lalken
Easton, Pa.	32,073	1.27	.81	19,504	Etterbeck

was spent in fire-protection. The people of the country have thrown away about $9,000,000,000 in that time.

If the loss had been on the European ratio, and the cost of protection had also been on the European ratio, the total waste would have been about $1,630,000,000 instead of $9,000,000,000. Here is an actual waste of about $7,270,000,000 in thirty-three years.

In the census for 1900 the Government reckoned the actual value of all the farm and factory buildings of the United States at $3,556,000,000. In other words, the actual waste by fire, as compared with the European standard, was more than twice the real value of all the farm and factory buildings in the United States in 1900. Including all the skyscrapers, railroad terminals, residences, factories, and buildings of all sorts, and their improvements, that actual waste in the period covered is more than all the builders of the country have created in any ten-year period in our history.

People do not trust fire statistics. A few special cases — a fire like the Baltimore, Toronto, or San Francisco fires of recent years — may twist the figures out of all perspective. It is really the little fires that count, but it is the big fires that make most impression on the total figures. So, just to bring the matter home to the public at large, here are some figures, also from the Government, showing the number of fires for each 1,000 inhabitants in a few of the cities that suffered most in 1908:

NUMBER OF FIRES PER 1,000 PERSONS

City	*No. of Fires*	*City*	*No. of Fires*
Worcester, Mass.	9.59	Minneapolis .	5.52
Providence, R. I.	8.25	Indianapolis .	5.48
Kansas City, Mo.	7.54	Dayton, O. .	5.13
New Haven . .	5.56	Memphis . .	5.12
Boston . . .	5.52	St. Paul . .	5.11

Why four New England cities figure in the five cities that had more fires in proportion than any others in the United States may be left to the cities to explain.

The fact that stands out so very prominently from all these figures is that if there is any one country in the world where men need sound and adequate fire-insurance, this is the country. The man who, in the face of these facts, leaves any of his insurable property unprotected shows a lack of common sense and business judgment quite beyond characterization.

Most men recognize this as true; and the volume of fire insurance in force keeps pace fairly well with the growth of property. The rates remain relatively the same. There has been no check in the proportion of fire-loss in the country, and the probabilities are that there will not be any appreciable reduction in fire-insurance rates until the standard of building reaches a new level. Of course, rates are graded according to the risk, in a measure; but the premiums leave a very comfortable margin over losses. They will continue to do so, so long as the ever-present danger of a conflagration such as the Chicago fire, the Boston fire, or even the Baltimore fire remains as a fire-insurance liability.

In the matter of rates, then, there is little to choose between the fire-insurance companies. The policies, too, are almost identical. There remain only one or two factors to take into account in placing your fire insurance. Here they are:

First, find out whether the company fights claims, has a big amount of unpaid claims on its books, and has a bad reputation in this respect with the brokers who handle policies of many companies.

Second, discover whether or not the company stands right with its own state department of insurance. Maybe its finances need some attention.

Third, do not patronize a company merely because it is a "home industry." Maybe it was started last year by a few local capitalists just to make a 10 or 20 per cent. profit out of its stock. There are a good many unsound companies afloat just now in this country. When you have more than six hundred well-established companies to choose from, why take any chances at all?

Fourth, if the company offers you, along with your insurance, a first-class chance to make a fine investment in its stock at some price or another, don't do it. Fire insurance is fire insurance; investment is investment. If you mix the two, you will likely lose on both.

THE PASSING OF THE MAN WITH THE HOE

TO PLOW FIVE SQUARE-MILES, THE FARMER WALKS THE DISTANCE AROUND THE WORLD—THIS PLODDING TOIL TO BE ENDED BY MACHINES THAT WILL USE THE POWER STORED IN ONE ACRE OF POTATOES TO PLOW TWO HUNDRED ACRES—THE ANSWER TO WHAT MUST WE DO TO BE FED

BY

EDWARD A. RUMELEY

IF George Washington should come to life in Pittsburg now, should visit the steel mills, the Westinghouse plant, or a hundred others, he would be hopelessly bewildered. It is all beyond the philosophy of a man who lived a hundred years ago. There is hardly a process which he would understand.

If a contemporary of Moses, who was a good farmer, should come to life and visit the ordinary American farm, he would recognize practically every process.

The industrial revolution, the steam-engine, electricity, everything that goes to make up the "steel age," have in fifty years created a greater difference in the production of the world — except in agriculture—than had been made since the days of the Pharaohs. The corresponding revolution in agriculture has unobtrusively begun.

Ten years ago, at the University of Oxford, our lecturer on political economy laid it down as axiomatic that science and invention, the division of labor, the law of diminishing returns, could do little to save human labor on the farm; that the conditions of its toil were nearly unalterable, its processes predestined to be slow. Yet these few years have seen immense advance, and to-day no forecast can predict the progress of the future, for man is clearly shaking off the heavier shackles of manual toil. Pipe and tabor no longer lead the procession of harvest home, but drudgery goes as well as romance, and a business air sets the thresher to factory pace.

American agriculture must develop enormously along new lines if it is to save the nation from hunger. Within ten years a million new farms have been created, and our farm products have more than doubled. But consumption is still so rapidly overtaking production that our exports of agricultural products last year fell fifty-six million dollars below those of 1899.

Better methods will do much to save us. Science is making the land more productive. It is molding plant life to serve better and more profitably our daily needs — trebling the amount of sugar in the beet, quadrupling the possible corn-yield of an acre. But machinery will do more. By its quick, reliable work it has already vastly improved the quality and quantity of the harvest by confining crop operations within the period when the most favorable conditions prevail.

There are to-day more gas-engines at work on our farms than in our shops and factories — at least 600,000 of them. And it is estimated that one-eighth of all the power used on our farms is now mechanical. The eighth will soon become a quarter. Light motors are speedily growing heavier, showing that heavier and more general work is now being done by machinery. Plainly, we are seeing the beginning of the era of mechanical power on the farm.

Swift-coming changes make prophecy

sure. The old-style farm-wagon is being rapidly replaced by eight or ten different machines, and its one surviving use — that of carrying the farmer and his family — is now being widely usurped by the automobile, of which several special types for the farmer have just been designed. One, half-buggy, half-truck, can be harnessed to a wagon or to light machinery. A single manufacturer is now selling a thousand farmers' automobiles a week, 650 of these going west of the Mississippi.

In the near future, to escape ruin, every farm must have its own power-plant in an efficient motor. Even now, motors of myriad kinds are performing nearly every sort of farm labor — plowing, seeding, harrowing, rolling, reaping, binding, threshing grain, grinding corn. They are shredding fodder, loading hay, milking cows, shearing sheep, drilling wells, running spray-pumps to protect the fruit-trees — even doing chores by carrying water and sawing wood. This ready power on the farm will give country life many of the conveniences of the city. Nearly everywhere the farmer now has the telephone and daily mail delivery. The motor will add electric light and heat and an automatic water-system giving a pressure equal to that of the city main.

The farmer's wife will need but to turn a wheel, throw a switch, twist a stop-cock, and be saved her hardest work. Butter will again be made on the farm and not in a factory. The motor will run the cream-separator and churn, and dispense with the labor of the milk cellar and its endless array of pans and crocks to be washed. It will give new speed to her sewing-machine. On Wednesday ("sweeping day") it will save her health and strength with a vacuum cleaner. It will run her washing machine and mangle. Through a dynamo, in the electric fan and flat-iron, it will bring her blessed relief from the fiery heat of the range on ironing day. It will be a ready helper in the kitchen. And all this takes no account of the promise of new inventions.

Until now, mechanical progress has seemed haphazard. Farmers have studied their own needs. Some of them have been able inventors, and the chance of a market has sharpened the wits of manufacturers. But there has been no competent direction — no one to whom either farmer or manufacturer could look for advice or help in mechanical improvements or the better planning and organization of farm work. Significant of the coming age, a new profession has suddenly been created by this necessity. Eight state colleges are now offering full courses in agricultural engineering.

As machinery multiplies rapidly for every conceivable farm need, as it cheapens in cost and grows in efficiency, we begin to understand the astonishing gist of the thing. See how enormously it increases the acre-efficiency of man, saving human labor in a day when labor is scarce. From plowing to shelling, it takes four and a half hours of work to produce a bushel of corn by hand. By the latest mechanical methods, the whole process can now be accomplished in forty-one minutes. A bushel of corn can be shelled in one minute where it formerly took a hundred. In planting corn, one man in a single day "puts in" twelve to fifteen acres better than the "man with the hoe" can plant one.

The latest harvester equals the work of forty men with sickles. Instead of eleven hours to cut and cure a ton of hay, to-day it takes one hour and thirty-nine minutes. And so the round of the whole farm. The saving of labor is so vital a thing to the farmer that it often pays to use a machine like the new corn-picker that saves men but not money.

The machine enormously saves animal labor, and a new question is being asked. It was only the other day that the Department of Agriculture told us:

> "The comparative merits of animal and mechanical power will in the end probably be resolved into a question as to which source of power will require the least acreage for the production of fuel, owing to the rapidly growing area required to supply food for the human race."

In farm labor we are seeing the passing of the horse and mule. The new internal-combustion engine costs about $90 for each horse-power, while a horse equally efficient costs from $175 to $200. Among many other economies there is the matter of food. The latest engine costs in fuel a half-cent per horse-power-hour; a horse's food costs eight and one-quarter cents. No wonder

that 75,000 gas-engines, representing the power of half a million horses, were sold to our farmers last year.

And the vital food-needs of men will hasten the passing of the horse. We are now tilling nearly all of our land that can be cultivated. Every work-horse displaced by tractor or automobile or engine represents an annual saving of more than $50 in grain and forage, which may be converted into food products for the maintenance of the human race. If half of our work-animals could thus be dispensed with, we should effect an annual saving of $600,000,000, an amount equal to our entire wheat crop.

The revolution is coming quickly. The machines we need lie mostly ready at hand. Their general use is only waiting for the cheaper power that we now have in promise. There has been but one great gap, and progress at last is coming where it was needed — in plowing, the work that consumes 60 per cent. of all the energy spent in tilling the soil. It seemed an epoch-making thing when Thomas Jefferson, Jethro Wood, John Deere, and James Oliver — all Americans — fashioned the modern plow from the crooked stick that for thousands of years was used for stirring the earth. But this tool, perfect for the use of a single man, is no longer enough. The interest of inventors and manufacturers now centres in the creation of plows that will do the work by wholesale — meeting by quick work the urgent needs of our sudden-massing populations. And we not only need plows that will break up rapidly and well the great fertile plains of the new Northwest and Southwest. There are the broad areas of the less productive lands that need not only efficient management and systematic organization, but cheaper plowing than any yet known. Foreign competition is keen and intelligent in agriculture above all, and for the future our methods must continually improve to meet it. Wholesale methods, which means mechanical methods, are the order of the day.

More power in human labor is spent for plowing than for any other daily need. The trudging plowman in the field, with his team, is not an impressive producer of power when compared with the Mallet locomotive or the central power-station of the city street-car line. But there are 6,730,000 farmers in the United States, each annually plowing more than thirty-nine acres. This is an amount of land that in the aggregate is equal to about one-eighth of the whole United States — an area nearly equal to that of all the states east of the Mississippi and north of the line of the Ohio River. This for our nation alone. To produce sustenance for the entire human race would require, if all lived as we live, that the surface of a tract equal in extent to the entire continent of South America be turned over once a year.

The monotonous distance traveled by these plowmen is enormous. To turn a single acre of ground with a twelve-inch plow requires eight and one-fourth miles of heavy furrow travel. In plowing one square mile of land, the solitary plowman and his horses must walk 5,280 miles. It would be easier (and the distance is less) to walk around the earth at the equator (if there were no ocean) than to follow a plow turning a prairie of five square miles. To equal our national tale of plowing — the work of myriads of teams, each using force sufficient to move seven tons over a good stone road — it would take an army of 4,550 plowmen to travel as far as from the earth to the moon and back again. For the world's yearly labor of this kind, it would send about 80,000 men on that same half-million-mile journey.

In spite of Deere and Oliver and a half-century of inventors, the drudgery of this toil remains terrific. Every other labor has been greatly lightened. In the primitive labor of man, power began with the human muscle and was used for three great human purposes. It was used for changing the shape of materials — grinding grains into foodstuffs, spinning and weaving fibres into articles of dress, shaping stone, wood, and metals into implements and dwellings. It was used for transportation. And it was used for cultivating the soil. For all of these uses it was transmitted by back-and-forth motion. But in the first of these, the different forms of manufacture, after James Watt and his steam engine of 1765 the principle of rotation was substituted with wonderful results. Now the industry of the world centres in the steam-driven factory;

for, more and more, mechanical power has been substituted for human muscle, until to-day in manufacture — which shapes the materials — the master-workman is often only the intelligent onlooker, furnishing the machine with material and guiding its work. In transportation, Fulton and Stephenson applied the rotary principle — and to-day a steam-carried commerce has linked the nations together. Now the farmer has become a progressive part of our modern industrial world, and has gradually been developing a taste for machinery. And so he has long been using the steam-engine to save money, to hasten work, and to spare himself something of his age-old, heavy toil. He first tried it by drawing a gang of plows back and forth across the field by a cable and winding-drum, driven by an engine at one side — or by two engines, one on each side of the field. When the steam-engine became self-propelling a few years ago, he applied it to plowing, hitching two or three ordinary horse-plows behind. Gradually an engine with heavier gearing, broader wheels, and greater power was developed, and the present type of modern steam-plow was established. Such engines, slowly improved, have come into general use on the large level farms of the West. Some of them have as much as 120 actual horse-power, draw behind them as many as forty plows, and turn over from seventy-five to ninety acres a day.

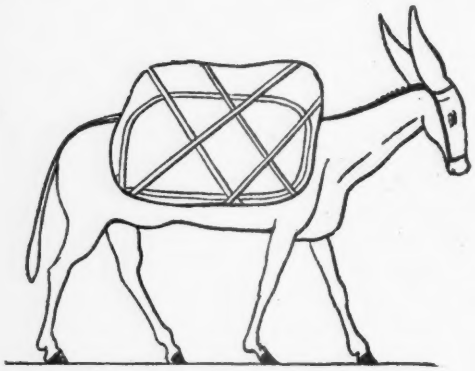
This power and efficiency have brought the steam-plow into rapidly widening use during the last five years. The steam-engine, however, is extremely heavy. It requires from 1,500 to 5,000 pounds of coal, and from 12,000 to 25,000 pounds of water for every ten hours' work. And it needs men and teams to haul this great amount of fuel and water. Most serious of all, in converting its energy into a forward pull, as well as in propelling itself, the engine loses an enormous percentage of its power. Its net thermal efficiency in actual work in the field is less than 2 per cent., as compared with about 20 per cent. for the horse. In other words, ninety-eight pounds of coal is wasted to obtain the energy that is latent in two.

This is a heavy loss, but the modern plowing-engine, while less efficient than the animal when at work, consumes no fuel when idle; and when the total amount of work is compared with the total amount of fuel, the efficiency of the engine under usual conditions is greater than that of the animal. Here is an advantage that is especially marked in those new districts of the Northwest where the land is devoted exclusively to grain-growing. Active farm work is in progress during only eight or nine weeks of the year, and so the net efficiency of the animal fluctuates between 1 and 2 per cent. When not in use the engine can be oiled and set aside. It needs no attention that could prevent the farmer's wintering in California or in Florida until the next year's work begins.

And the engine prodigiously saves human labor. With horses, every plow needs a man; but with a good engine, two men can operate eighteen plows and hold controlled in their hands the power of eighty horses. It can travel faster than the horse, and the engine does not tire. The horse can be used but ten hours a day, while the engine with headlights can be operated, as it often is, throughout the twenty-four hours. This, again, is of particular importance in the new wheat districts of Canada, where early frosts make it imperative that the earth be turned and the seeding done as promptly as possible after the spring thaw.

The competing rush of the work of the world develops machines as nature develops an animal — through selection. Defects are eliminated and efficiency perfected; and here progress is rapid. The plowing-engine suddenly became a thing of great importance to the world five years ago, when an internal-combustion engine (a gasoline engine) was mounted on a traction truck and harnessed to plows. This building of an oil-burning plowing-engine is by far the greatest step that has been made in the historic development of the plow from the crooked stick dragged through the earth by the first farmer. And it sharply marks an epoch, for it has opened the world's last great power-market to mechanical motors.

Stephenson once said that the locomotive was not the fruit of any one man's effort, but the work of a generation of engineers. So the modern plowing-motor

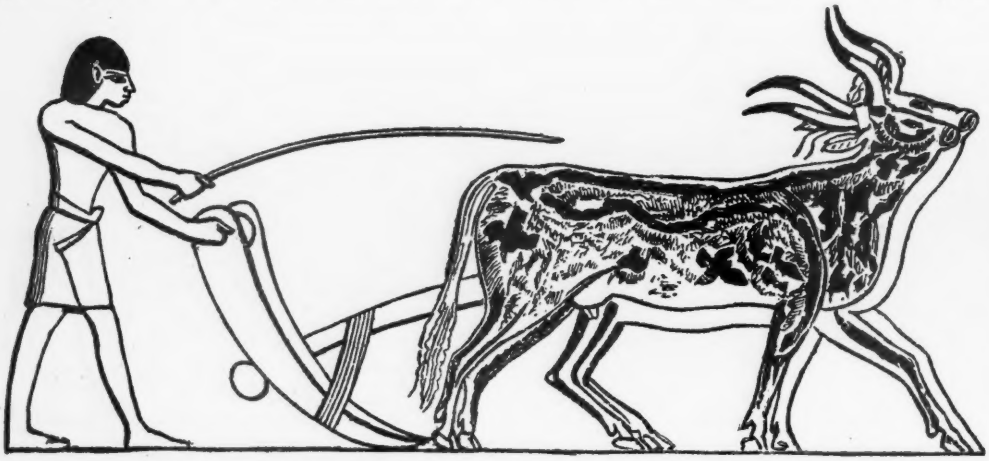


A COMMON CARRIER OF ANCIENT EGYPT

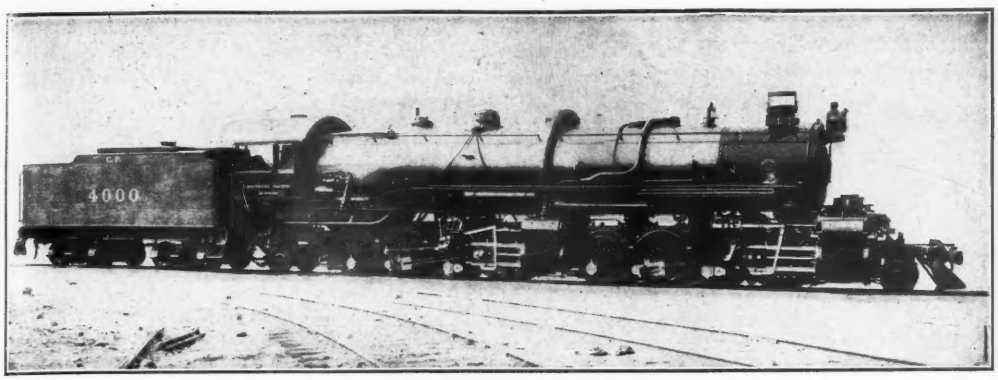
has come from thousands of ingenious inventors and farmers. We are now at work upon the solution of the last problem, which is that of economy — for, just on account of its present cost, the motor engine is not rapidly enough displacing animal labor. And that is the reason why as yet only one acre in 20,000 is plowed by machinery.

So, although mechanically these gasoline engines have solved the problem, manifestly the world's greatest power need cannot be met by motors using the scarcest of all liquid fuels. The quantity of gasoline refined is but 4 per cent. of the crude oil brought to the surface in the United States, while 60 per cent. results in kerosene and the heavier oils. The remarkable increase in the use of the automobile has made the price of gasoline rise rapidly. Fifteen years ago it was a waste product and sold at wholesale for two cents a gallon, while kerosene brought ten cents. To-day in the Middle West the wholesale price of kerosene ranges from six to eight cents, and the refineries hold millions of barrels of it in storage for want of a market; while gasoline sells at twelve and thirteen cents, and the supply is limited. Comparing the two by careful tests, it was found that kerosene contains per cubic inch about one-fifth more power than gasoline, or any other liquid fuel known. And so these last years inventors have been trying vainly to devise an engine that would burn kerosene with perfect combustion. Millions of dollars have been lost in futile attempts to construct a practical oil-engine, but the principle has at last been discovered.

Like the boiling tea-kettle with James Watt, the ordinary kerosene lamp revealed the secret of perfect combustion to John A. Secor. A lamp-burner when turned too high furnishes too much oil; this results in free carbon and a sooty lamp-chimney. If the lamp be turned too low, the combustion becomes incomplete and the lamp throws off foul-smelling and poisonous gases. Good illumination and good combustion depend on accurate adjustment of the wick, of the supply of fuel and air. In an engine, the proportions of fuel and air to be exploded in the cylinder must vary from minute to minute, from second to second, with the increasing or decreasing load of work and with the slightest change in atmospheric conditions. The human hand is not quick



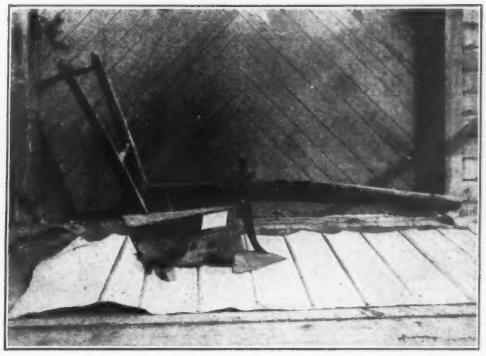
AN EGYPTIAN PLOWMAN IN THE AGE OF THE PHARAOHS



A COMMON CARRIER OF TO-DAY

In transportation and manufacturing, mechanical power has revolutionized our civilization

enough, not deft enough to regulate the fuel supply of an engine. Regulation must be effected positively and automatically. The needed fraction of a drop of oil must be weighed out with the precision of the finest chemist's scales. The adjustment of this supply by a delicately working governor is the secret of the new engine that, in the first instance as a traction engine, will cut the cost of plowing an acre of prairie land from $1.50 to $0.66. But the principle is of the widest application, and it is possible that new forms of the internal-combustion engine will displace all existing types of motor engine. It is already proved that it will burn alcohol as well as kerosene. Here



A HUNDRED-YEAR-OLD AMERICAN PLOW

Except for the iron share and jointer, it is little better than the ancient Egyptian instrument

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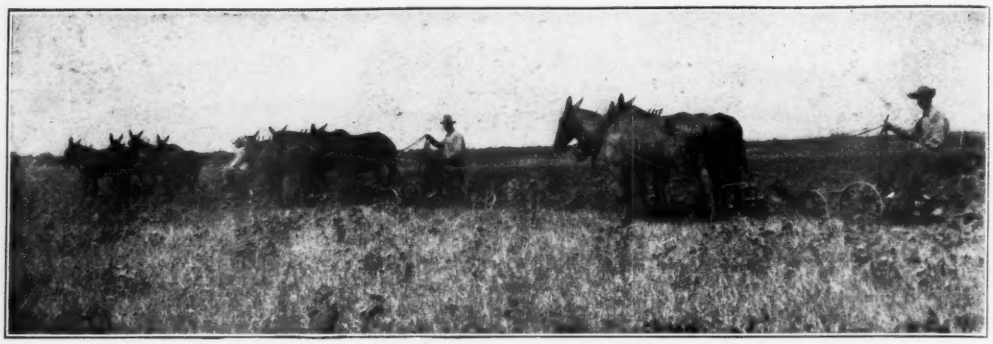
AN EGYPTIAN PLOWMAN OF TO-DAY

Through the centuries from the Pharaohs to Lord Cromer, Egyptian agricultural machinery has not advanced



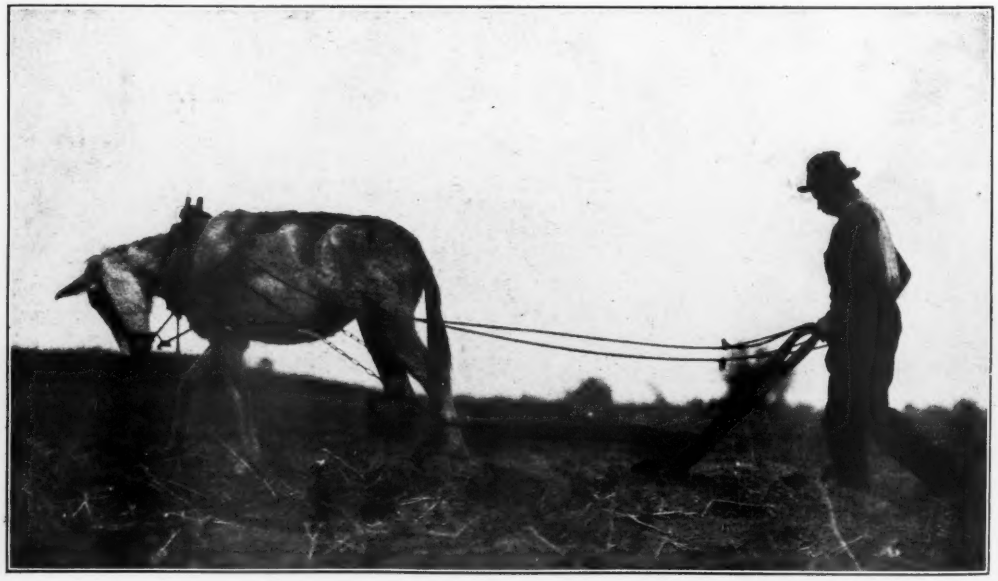
THE THREE-HORSE GANG-PLOW, STANDARD FOR THE MIDDLE WEST

"More power in human labor is spent for plowing than for any other daily need. There are 6,730,000 farmers in the United States, each plowing nearly forty acres a year"

are many problems for the inventors and engineers of the world.

Applied to plowing, the internal-combustion engine now uses from three to four gallons of gasoline or kerosene in turning an acre of land. A barrel will hold its day's fuel supply. With the development of the type that will come during the next decade, when the engine will certainly more nearly rival the animal body in ability to develop power from fuel consumed, we can reasonably hope that this consumption will be cut to two gallons an acre. We may be fairly sure that kerosene and gasoline will be the great fuels for the present generation, but the world's supply of stored energy in coal and mineral oils is limited, and the next step, viewed from the standpoint of centuries and of increasing human control over the forces of nature, will be the utilization of *this year's* sunshine, and not that of past ages which we dig and pump from the earth.

The leaves of the potato plant will gather the energy of the sun and store it on an acre of land in 400 bushels of German alcohol potatoes. These will produce a gallon and a half of alcohol a bushel. And



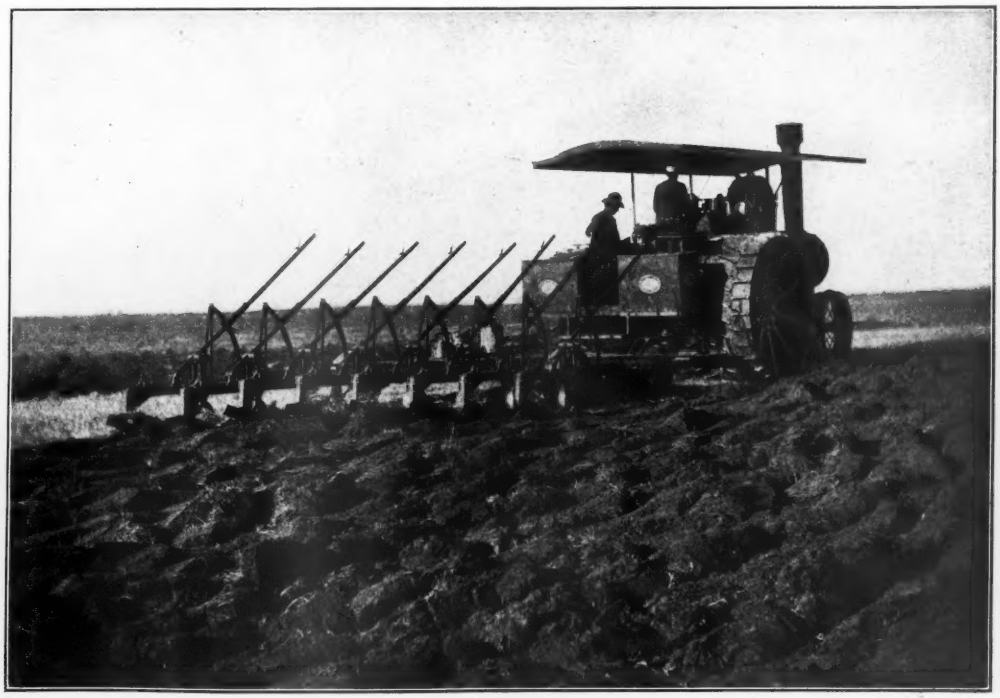
THE ONE-HORSE PLOW OF THE COTTON STATES

"To turn a single acre with a twelve-inch plow requires eight and one-fourth miles of heavy furrow travel"

BREAKING PRAIRIE WITH FOUR-HORSE TEAMS

600 gallons of alcohol furnish fuel enough to plow a 200-acre farm. Then one mechanical tractor and one acre of potatoes will plow 200 acres of land, for which eight horses and forty acres of oats and hay land are now needed. To state the fact in another way: the solar power stored by an acre of potato plants in a single summer would suffice to plow that acre for two centuries.

The new, cheap method of producing alcohol from cellulose promises undreamed-of wonders of economy; and the new chemistry — extracting by tons, and cheaply, nitrate fertilizers from the air — will guarantee an inexhaustible fertility to the earth.



THE STEAM PLOW OF THE PLAINS

"With horses, every plow needs a man; but with a good engine two men can operate eighteen plows and hold controlled in their hands the power of eighty horses which never tire"

We have traveled far these late years. Untold centuries lie between the steel roller-mills of Minneapolis and the Russian peasant who still grinds his grain by rubbing it between two stones. All of our civilization lies between the stick-plow of the Cingalese and the new internal-combustion engine.

Vital human needs compel great inventions. Wheat is the noblest and most expensive in point of labor of all our foodstuffs; and with our present farming equipment we cannot grow enough of it. Fifteen years ago Sir William Crookes foresaw its impending dearth. The significance of its shortage has been repeatedly and forcibly pointed out by such seers of the marketplace as Mr. James J. Hill. And here is the immediate necessity for more rapid and efficient plowing. With a swiftly increasing population in all civilized countries except France; with an increased per-capita consumption of wheat and a decreasing yield per acre in the great wheat-growing districts; and with a limitation of the area devoted to cereals in the older portions of America, it is imperative that the still unused wheat lands of the world — Canada, Siberia, the Argentine — be opened as quickly as possible. In reality it is this necessity that is developing the engine.

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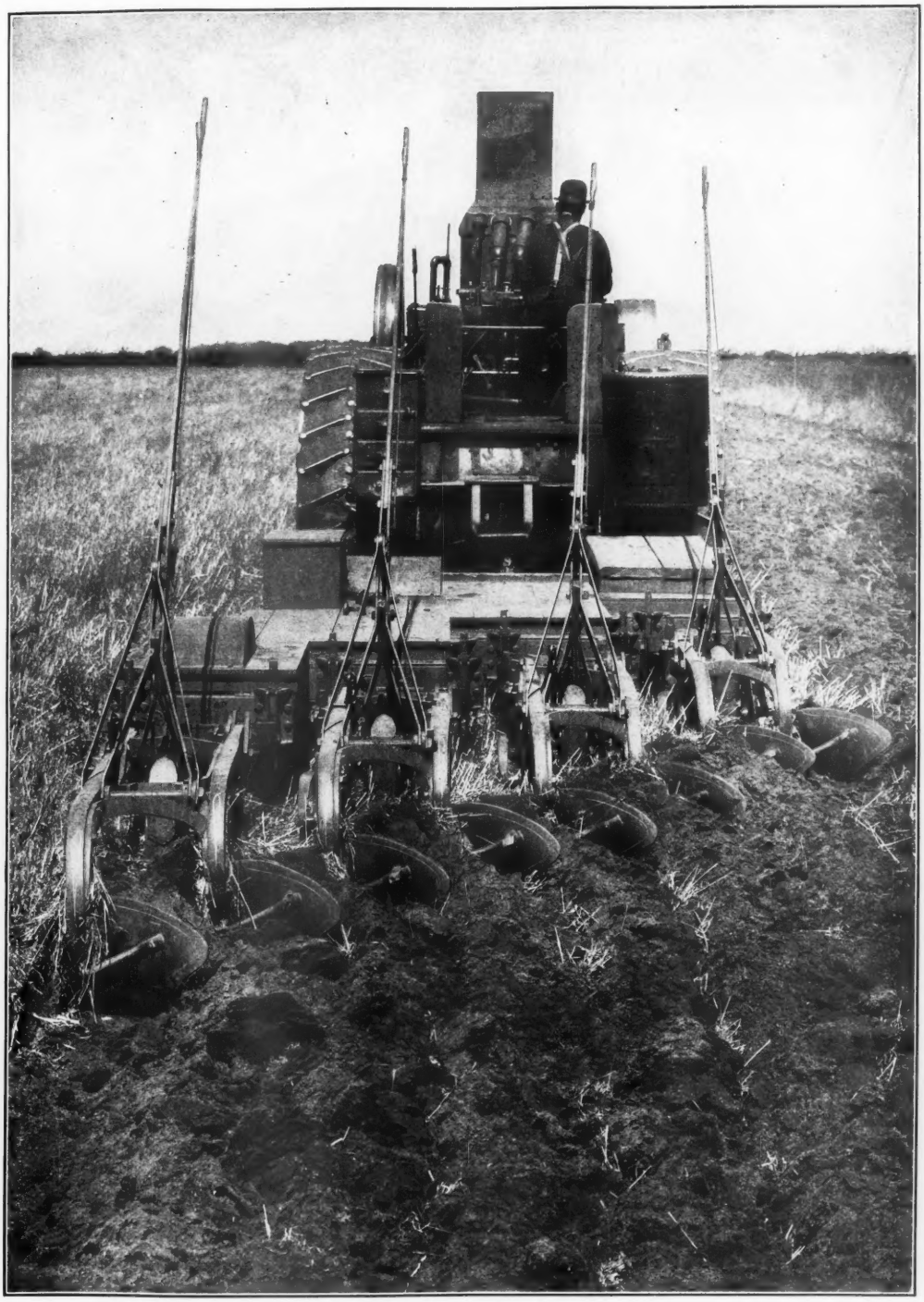
AS GOOD AS FOUR HORSES
An agricultural motor drawing a double-furrow plow

MR. JAMES OLIVER, THE PLOWMAKER, AT 87
"Thomas Jefferson, Jethro Wood, John Deere, and James Oliver — all Americans — fashioned the modern plow from the crooked stick that for thousands of years was used for stirring the earth"

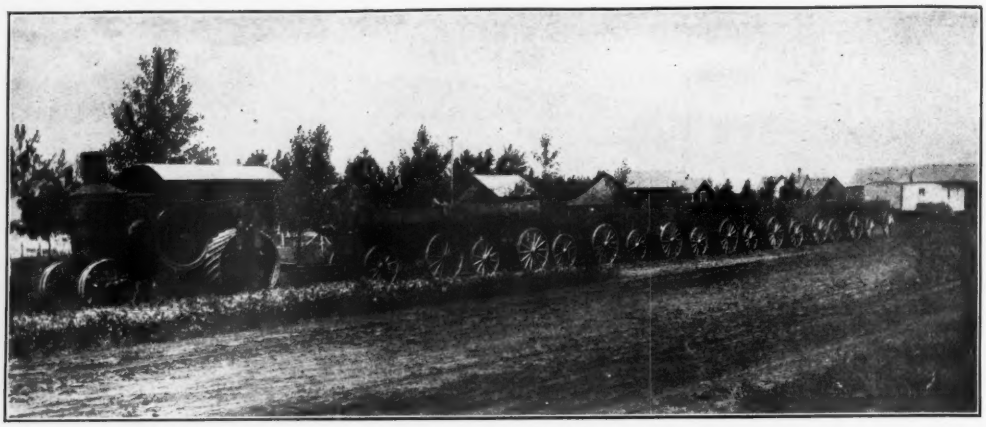
So, even in farming, by an inexorable law the era of machinery asserts its processes. Agricultural Argentine, depending on horses, found it impossible last year to turn the usual number of acres (and so grow the usual harvests of wheat), owing to the drought that curtailed the hay crop. In the new lands of Canada, horses must be expensively wintered through a long and cold idle period. The lack of power for plowing has been the most potent check to faster settlement; while the great actual development of the last few years has been due, in large measure, to the rapid advance of steam plowing.

Climb upon one of the new plows. Study the throbbing engine and watch the work. Past the curved and shining prows of fifteen plows the rushing furrows flow like water. The vibrant steel sings. You wonder what the effect of the new mechanical age will be upon the farmer. I think that the answer is plain. It was a Hebrew tradition that God had cursed the land. Certainly, until

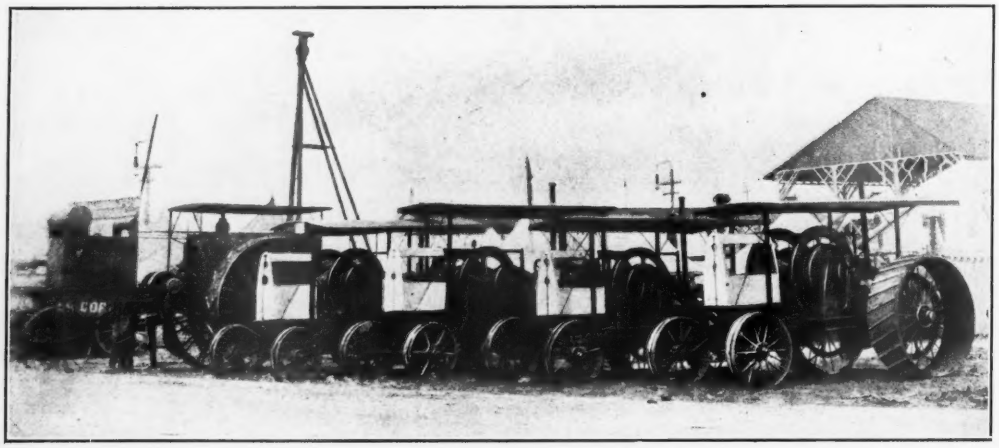


AN INTERNAL-COMBUSTION ENGINE

It uses only three or four gallons of gasoline or kerosene in plowing an acre. A barrel will hold its day's fuel supply. When it is adapted to alcohol, the fuel from one acre of German potatoes will supply power to plow that acre for two centuries



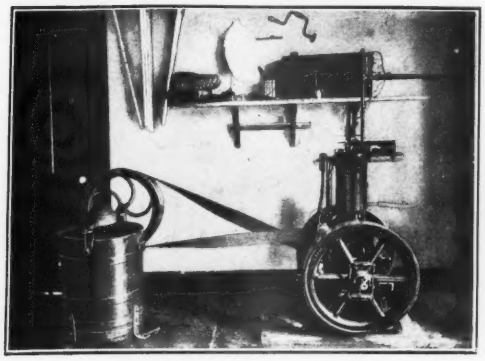
On the road to market



Ready for sale at the county fair

Driving a threshing outfit in South Dakota

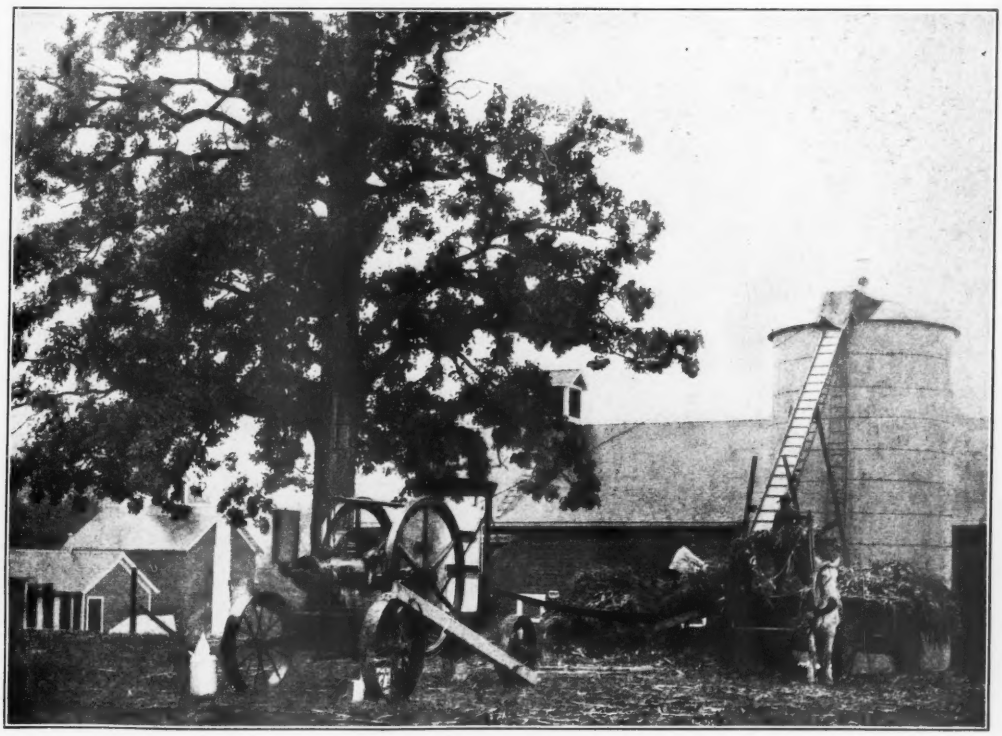
THE INTERNAL-COMBUSTION ENGINE ON THE FARM



MAKING ICE-CREAM

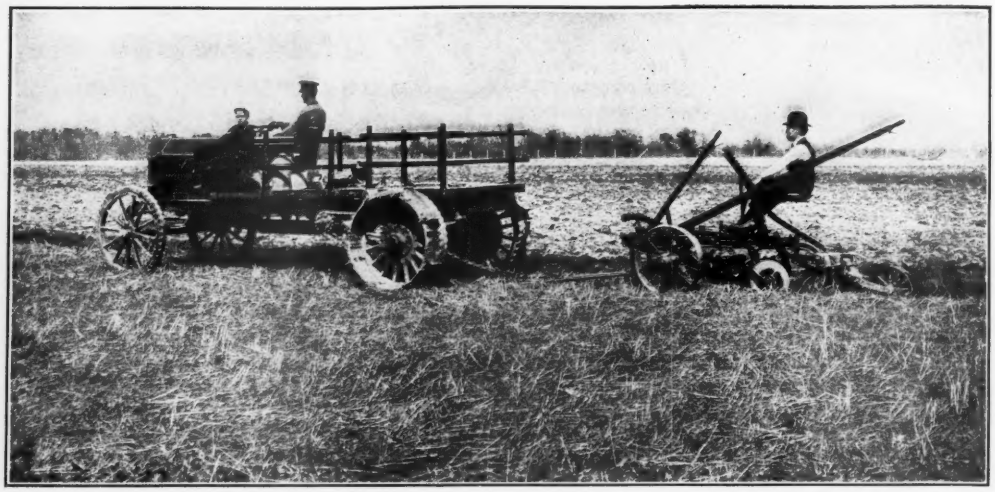
RUNNING A CONCRETE-MIXER

to-day, the plowman has had to eat bread in the sweat of his face. The heavy, monotonous, muscle-straining work stamped itself upon his very body. You saw it in his eyes. Men called him a clod-hopper. Like all other body-weary toilers, he showed the dulling effect of slow and unintelligent drudgery upon the human mind. But with our new age the college-bred man — the agricultural-college-bred man — is multiplying among farmers. And the farm-hand of the near future will be a skilled laborer; like the machinist in the factory, he will be alert and intelligent for every act of work. Machinery will furnish the power for the heavier kinds of labor — the power that formerly came from his own muscle. And the new era will enormously magnify his productive power and the productive power of the land that he tills.



THE VERSATILE GAS-ENGINE

One of the 600,000 now at work on American farms



A SUCCESSOR TO THE FARM WAGON

A tractor that will haul produce or plow as the occasion demands

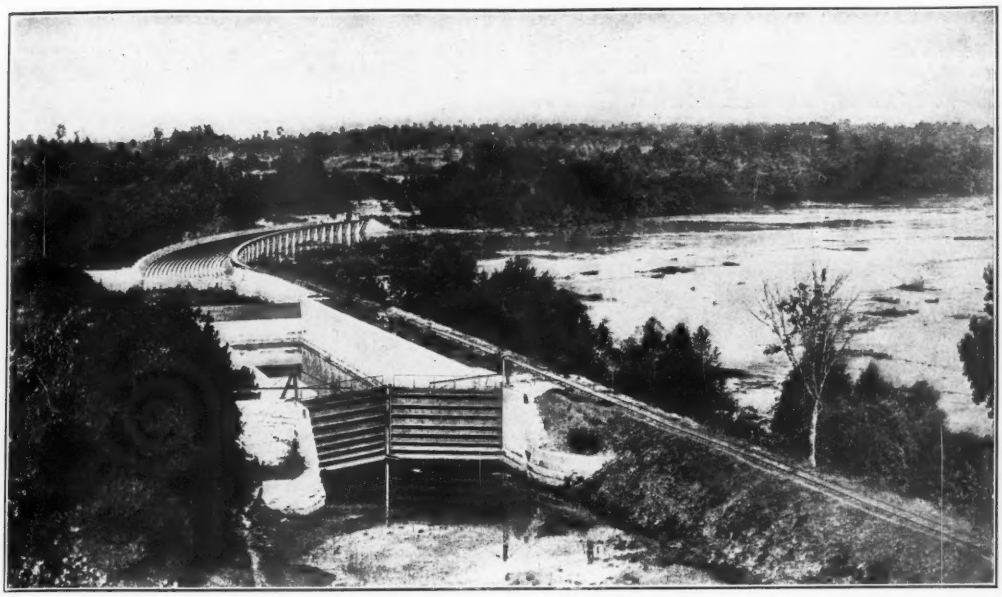
The American of the generation of Cyrus McCormick taught the world how to shift the labor of binding wheat, mowing hay, husking corn, and threshing grain from the human muscle to the animal. Through the application of mechanical power, modern transportation and manufacture have changed the world. It remains for the American of our day to develop the engine as the source of power for the farm, and complete the cycle of the application of machinery to all three of the great human uses.

A GAS ENGINE SPRAYING FRUIT-TREES IN ARKANSAS

It is estimated that one-eighth of all the power on the farms is mechanical

THE MUSCLE SHOALS CANAL ON THE TENNESSEE RIVER, IN 1889

To save shippers a few cents a ton it cost the National Government in maintenance and interest (at 3 per cent.) $12.70 for every ton of freight hauled through this canal in 1908



THE CRIME OF "THE PORK-BARREL"

HOW MILLIONS APPROPRIATED FOR RIVER IMPROVEMENT ARE WASTED IN FAVOR OF CONGRESSIONAL DISTRICTS

BY

HUBERT BRUCE FULLER

"The Crime of 'the Pork-Barrel'" and the two articles which follow it—"A Congressman's Letters" and "Schedule I—The Cotton Tariff"—taken together explain clearly and without partisanship the wasteful and dishonest system of which Congress is both the author and the victim; a system which taxes the people for the benefit of the few, throws away millions of dollars every year, and by indefensible special favors builds up a party machine in the House of Representatives and the Senate which perpetuates itself by the very abuses that it was built on. All three articles are by men who have seen the system at close range and who know it well, and one of them is by a Congressman who is both a beneficiary and a victim of it.

THE River and Harbor Bill which was passed at the recent session of Congress appropriated $52,000,000, a large part of which will be wasted, as the millions which have preceded it have been. Senator Tillman once said on the floor of the Senate:

"The whole scheme of river improvement is a humbug and a steal."

His next sentence explains why the iniquitous system has lasted so long:

"But, if you are going to steal, let us divide it out and not go to complaining."

That is exactly what is done. There

are 391 Congressional districts. Of these 296 received an appropriation in the bill — practically every district that has a harbor, river, creek, or bayou within its limits. This appropriation (familiarly known as "the Pork-Barrel") is one of the three funds by which Congressmen are particularly given to seeking personal advantage at the expense of the national treasury.

The system works almost automatically. When a newly-elected Congressman reaches Washington he is unfamiliar with legislative life. He has no influence. His committee assignments are modest and inconspicuous. Yet he must accomplish something to show his constituents that he is active in their interest. He may hope to secure a certain number of private pension-bills; possibly he may secure an appropriation for a Federal building; but if there be a single creek in his district, no matter how hopeless and shallow, he may secure an appropriation for its improvement. It matters not if the stream has never seen a vessel, or if no ton of commerce has ever graced its surface: he secures, nevertheless, a portion of the "pork."

TYPICAL DOCKS AND LOADING FACILITIES ON THE MISSISSIPPI RIVER

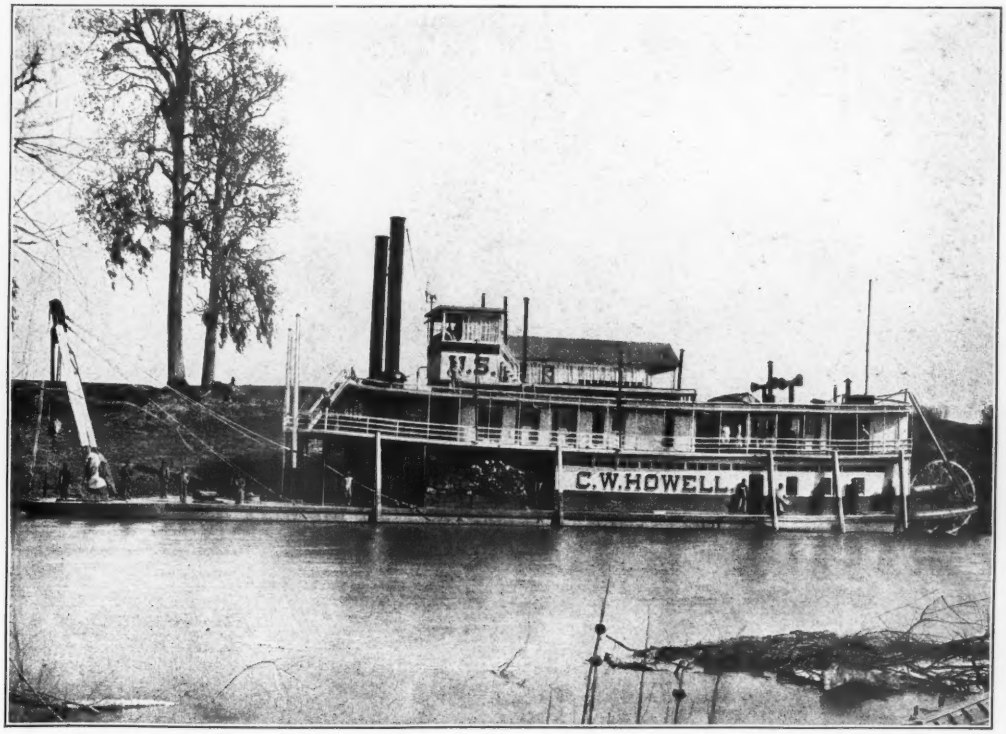
"The United States has spent more on the Mississippi River than any government has ever spent on any other stream in the world. The simple fact remains that the Mississippi to-day possesses the channel, but it is not used"

The game works both ways. To gain

THE RED RIVER (AT THE MOUTH OF THE CANE RIVER, LA.) "IMPROVED" SINCE 1828

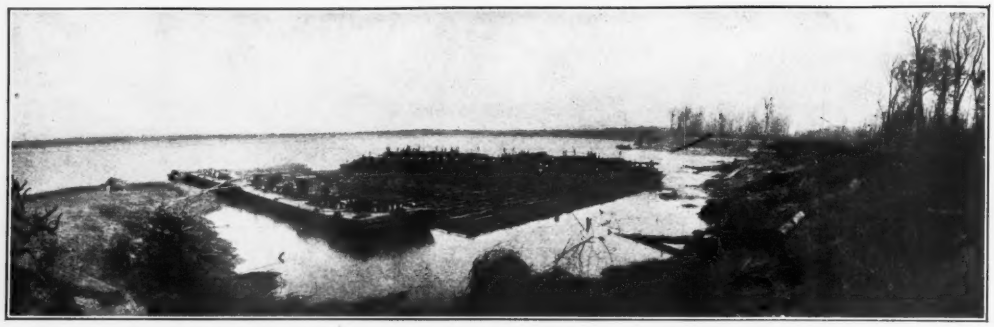
In 1908 the transportation of 841 tons of freight cost the Government $93 a ton in maintenance alone

access to "the barrel" he must secure the indorsement of the powers that dominate Congress. He must be prepared to vote for measures fully as iniquitous as his own, in which other Members are interested, lest they in turn vote against his project. Thus he is, as it were, "thrown and branded," and for the remainder of his political life he is safe and regular. The spirit of the institution is indicated in a



THE U. S. "SNAG" BOAT "HOWELL" AT THE MOUTH OF THE CANE RIVER

Employed by the Government to keep the Red River channel open for one trainload of freight a year



BUILDING A MAT TO KEEP THE MISSISSIPPI WITHIN BOUNDS

humorous incident which happened in the House of Representatives a few years ago when a river and harbor bill was under consideration. One item which bore the imprint of folly was bitterly attacked. A motion was made to strike it out. At this juncture the Member who was fathering the project rushed in on the floor and breathlessly exclaimed:

"Hold on here, that's my river!"

That member is now in the Senate and is still looking after his rivers.

Now and then some individual Member of Congress, aroused to protest by the

VICKSBURG'S WATER-FRONT ON A CANAL LEADING INTO THE MISSISSIPPI

The change in level of the river (at Vicksburg nearly 60 feet) makes it almost impossible to build efficient docks

iniquities of river and harbor bills, arises in wrath and assaults them. In 1901 Senator Carter of Montana filibustered one of these bills to its defeat. In April, 1910, Senator Burton of Ohio attacked the present system and the bill of 1910 in a vigorous speech, while interested Senators, men who had their "pork" at stake, sought to dissuade him from his purpose of exposing the whole miserable system. He spoke for two days. No one attempted to answer him. There was no need; it would have been a waste of time as well as hopeless. They had the votes and the bill was promptly passed upon the principle of division and silence. As Senator Carter said in 1901: "Every man who has a piece of 'pork' in the bill is expected to keep his mouth shut and to square his conscience with his duty under his oath as best he can."

The Board of Army Engineers is supposed to pass upon the engineering practicability of the "improvements" proposed. But in the River and Harbor Bill of the current year, numerous projects have been incorporated in direct violation of the findings of the army engineers, involving an aggregate appropriation of more than $1,100,000.

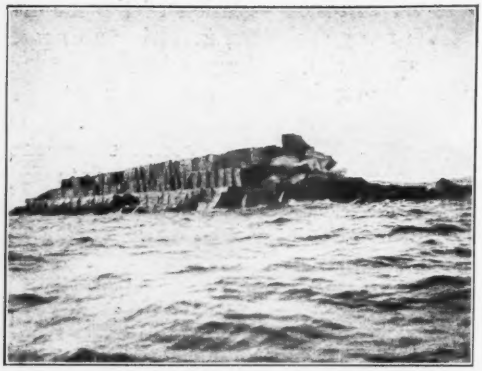
An appropriation of $30,000 is included for the improvement of Great Salt Pond, a so-called harbor of refuge in Rhode Island. The Federal Government to date has expended $199,000 on this project. All this has been done despite an adverse recommendation, not alone by the corps of engineers, but also by the state officials of Rhode Island, who said in their report of 1904:

THE MANCHESTER SHIP CANAL, ENGLAND

An inland waterway where ocean-going vessels of large tonnage can be efficiently loaded and unloaded

"This committee is convinced that the public interests have not been subserved by the expenditure of money at Great Salt Pond, . . . (and) that further expenditure of money on this enterprise would be wasteful. The committee was unanimously of the opinion that the expenditure of this sum of money, as well as all other money that has been appropriated and expended for the construction of an inner harbor at Great Salt Pond, could not possibly be applied to such purpose with any beneficial result."

Scarcely a mile distant there is another harbor of refuge upon which the Government has expended more than half a million dollars.



THE BREAKWATER AT SANDY BAY, MASS.

Work was begun on the Sandy Bay harbor of refuge in 1885. More than $1,500,000 has been spent already. Another $5,000,000 is needed to complete the work. At the present rate of appropriation it will take 51 years more

The original item appropriating $200,000 for improving the Sabine-Neches Canal in Texas by increasing the depth to twenty-four feet and the bottom width to eighty feet was changed in conference to an authorization of a re-survey. This in spite of the fact that a survey just completed condemned the project. The purpose of this improvement is to make seaports of the towns of Beaumont and Orange, located respectively on the Neches and Sabine Rivers. The entire project contemplates a total expenditure of $753,000. The "improvement" involved is at once so extravagant and so ridiculous as to tax human credulity.

Probably the most indefensible item of the bill is that which contemplates the appropriation of $1,000,000 for the so-called Lakes-to-the-Gulf Waterway. It does not become immediately available, but it is the opening wedge for the long agitated 14-foot waterway from Chicago by way of St. Louis and the Mississippi River to the Gulf of Mexico. Elaborate and com-

THE CASCADES "IMPROVEMENT" ON THE COLUMBIA RIVER IN OREGON IN 1896

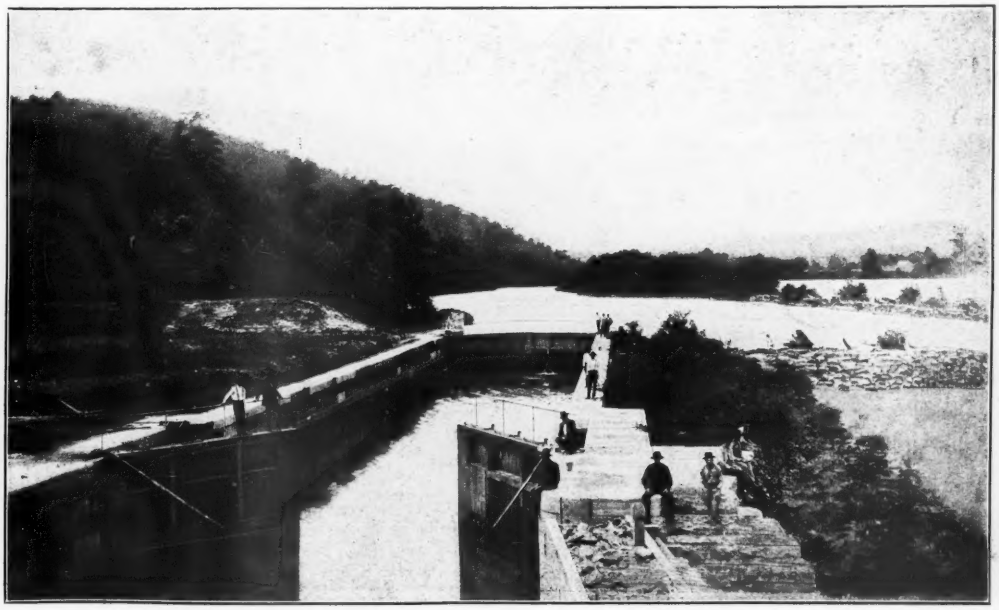
Which was under construction for seventeen years and cost$4,000,000

THE COOSA RIVER, ALA., IN ITS NATURAL STATE

It will require 23 locks and dams, which will cost $6,000,000, to make this section navigable

prehensive surveys have been made of this project, whose cost has been estimated at $150,000,000. The entire proposition was condemned — and yet the bill contains the appropriation.

One of the most glaring defects of our river and harbor bills is the custom of making partial appropriations for a large number of improvements without adequate provision for their ultimate completion. It

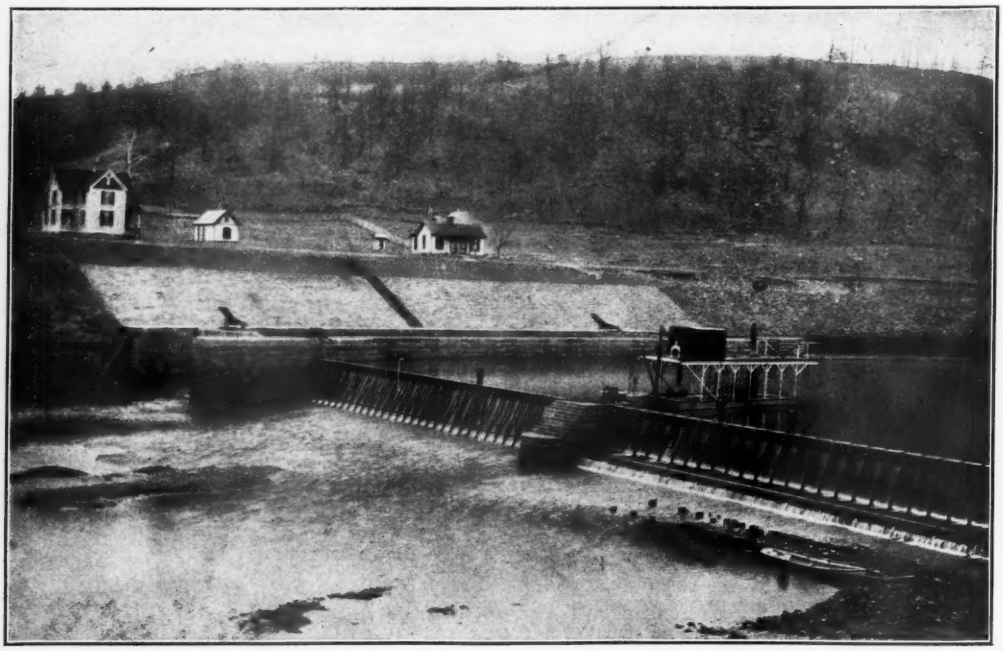


LOCK NO. 1 ON THE COOSA RIVER

A piece of excellent engineering, but of commercial folly made possible by "pork-barrel" appropriation

THE HENNEPIN CANAL — A WASTED $7,000,000

"The chairman of the Committee on Rivers and Harbors was General T. J. Henderson, who lived in the Illinois district traversed by the proposed canal. He dominated the Committee. The canal was begun — not because there was any widespread demand for it, but because of its influence upon his own personal and political welfare"



PART OF THE $1,400,000 "IMPROVEMENTS" ON THE BIG SANDY RIVER, KENTUCKY

One heavy coal-train can carry more freight than this waterway carried during the whole year 1909

comes from the desire to spread the money over as many Congressional districts as possible. The same cause leads to the construction of a number of disconnected, scattered, and ill-advised projects, instead of a comprehensive scheme.

Two or three examples will serve. Twenty-two years ago a breakwater was commenced at Bar Harbor, Maine. Approximately $220,000 has been appropriated to date. It is estimated that $200,000 is necessary to complete the project. The amount appropriated in the River and Harbor Bill of the current year, $25,000, is one eighth of that amount. Thus with an annual appropriation of this same sum it would require eight years to complete the work.

Work has been in progress at the Sandy Bay harbor of refuge in Massachusetts since 1885, with an expenditure to date of $1,587,918. The last bill carried $100,000 for this specific harbor, while the cost of completing the improvement is estimated at $5,154,952. At the rate set by the last appropriation, it will require to complete it fifty-one years more, which, added to the twenty-five years past, make a total of seventy-six years.

At the rate of appropriation in the last bill, ten years will be required to complete the breakwater at New Haven, Conn.; nine years to complete the improvement of the Tennessee River above Chattanooga; fourteen years to complete the present project for improving the Columbia and lower Willamette rivers below Portland, Ore., where work has been in progress for eight years on the present plan.

Another glaring example is furnished by the appropriation for the Harlem River. The existing project was commenced in 1878 and modified in 1886. The last bill appropriated $150,000. At this rate between seven and eight years will be required to complete a work on which one and a half million dollars has already been spent. The importance of the river is indicated by the total of 43,768,658 tons which traversed the stream in 1908.

The James River between Richmond, Va., and Chesapeake Bay affords another eloquent example of this same condition. There the existing project of improvement was commenced in 1884. There has already been $1,800,000 expended; and $3,540,000 is necessary for its completion. At the present rate of appropriation this will require fourteen years — a total of forty years.

The improvement of Bayou Plaquemine, by dredging a channel and constructing a lock to connect the bayou with the Mississippi River, was undertaken in 1887. The work has only just been completed after an interval of over twenty years, involving a total expenditure of $1,740,000.

From a variety of reasons one of the most interesting rivers for which an appropriation has been authorized is the Youghiogheny in Pennsylvania. This is a branch of the Monongahela River, which is in turn a branch of the Ohio.

Whatever the avowed reason for this project may be, the real purpose is the improvement of 1,125 acres of land which would thus be reclaimed for manufacturing purposes. In 1907 the engineers reported adversely upon the project. Two years later, however, the improvement of a section of the river up to West Newton, a distance of eighteen miles from the mouth, was recommended at an estimated cost of $1,050,000. The improvement contemplates the building of three locks and dams costing $350,000 each. The River and Harbor Bill of 1910 appropriates $100,000 for this purpose. The project in itself should never be undertaken. It is not justifiable; it is a local interest, an improvement of a branch of a branch. But the Congressman from that district is the Honorable John Dalzell, one of the ruling trio of the House of Representatives. The whole proposition smacks of "log-rolling" and the "pork-barrel" in its most iniquitous form.

The Government began work on the Columbia River at the Cascade Gorge in 1878. This improvement consists of works on a canal some three thousand feet long, including the necessary lock. In 1878 the cost was estimated at $3,500,000. The canal was finally practically completed in 1895 at a total cost of about $4,000,000. Some work still remains to be done on this improvement. In six of the intervening years Congress made no appropriation

whatever. For seventeen years not a particle of benefit accrued either to the public or to the Government.

The benefits to commerce from this method of expenditure are about what one would expect from such a system. A good illustration is the condition of traffic on the Tennessee River near Chattanooga, where the Muscle Shoals Canal has been built at a cost of $3,191,726. More than $1,100,000 has been expended for repairs and maintenance since completion. In the year 1908 $53,443 was expended for this purpose. The amount of freight of all classes carried through this canal in 1908 was 12,539 tons. It fluctuates from year to year, but that is a fair average. Thus, based simply upon the amount expended for maintenance and repairs for the year 1908 — the last for which figures are available — the cost to the people of the United States was $4.26 for every ton of freight carried. And if we compute interest at 3 per cent. on the original cost of the improvement, a further sum of $7.65 per ton must be added, making a total of $11.91 for every ton of freight passing through this canal.

The advocates of the Muscle Shoals Canal have insisted that it was their intention to develop a commerce which would pass through the Tennessee River and then up the Ohio to Cincinnati and other Ohio River points. This is a practical impossibility from an economic and commercial standpoint. The Tennessee River follows a wandering course, flowing now southerly, then westerly, occasionally easterly, and at length northerly. Three sides of the compass must be boxed to transport freight by river, say between Chattanooga and Cincinnati. And at the same time a railroad connects these two cities with a mileage of 338 miles, but a fraction of the distance by water.

It cost $38,218.50 to maintain a lock and dam in the Wabash River at Grand Rapids, Ill. and Ind., in 1908. The total traffic through this lock for the same year was 5,121 tons, of which more than 4,440 tons were lumber and timber. Lumber and timber do not require canalization for their transportation, since they can best be carried by rafts floated or poled down stream. A balance, then, of 680 tons remains of corn, shells, and miscellaneous freight. The mere cost of maintaining this lock, therefore, was approximately $7.46 per ton for all classes, including lumber in its various forms, and $56 for every ton of freight carried through it, excluding lumber.

The cost to June 30, 1909, of the improvement undertaken by the general government on the Big Sandy River and its forks, the Tug and the Levisa, including maintenance, has been $1,399,569. The commercial statistics for the calendar year ending December 31, 1909, on these streams are as follows:

TRAFFIC ON THE BIG SANDY

Commodity	*Tons*
Timber and lumber	75,199
Railroad ties	14,500
Live stock and poultry	171
Grain	82
Produce	35
Coal, bituminous	579
General merchandise	1,143
Total	91,709
Number of passengers	5,046

Exclusive of timber, such as lumber and cross-ties, the total traffic amounted to 2,010 tons. Computed on a basis of 3 per cent. on the investment, it cost the Government $20 for each ton of this freight transported. It should be added that the lumber in this district will soon be entirely exhausted, and thus no longer an object of transportation.

On the Kentucky River the Government has built eleven locks and dams at a total cost of $3,094,000 for construction and $1,772,000 for maintenance, making a total of about $4,900,000. In spite of the enormous amount expended for improving this river, traffic has decreased. In 1889, with but five locks and dams, the total tonnage was 435,595 tons; while in 1909, after the completion of eleven locks and dams, it amounted to but 422,854 tons, of which 288,321 tons were made up of lumber and logs. The expenditure for maintenance alone for this year brings the cost to the Government something in excess of $1 per ton.

The Green River in Kentucky affords an excellent example of pitiful traffic conditions. Six locks and dams have been built on this stream, and three more are urged by the optimistic citizens of the locality. The statistics of commerce passing Lock No. 6 on this river serve as an index of general conditions on the entire stream.

GREEN RIVER TRAFFIC AT LOCK 6

Commodity	*Tons*
Coal	129
Corn	16
Salt	55
Oil	10
Flour	40
Sugar	5
Hay	31
Cattle	2
Swine	1
Lumber	6
Iron	5
Horses and mules	1
Miscellaneous	1,819

These statistics are liberal, since they relate to the most important section of the river, that portion leading to Mammoth Cave and comprising a 16-mile pool. They reach a total of little more than 2,000 tons. And in the face of such returns the Government is urged to expend approximately $750,000 for three more locks and dams — possibly to bring down to the marts of trade another lone mule now braying in the upper reaches of the stream.

On the upper section of the Coosa River, in Alabama, a project was adopted in 1890 and modified in 1892, providing for the construction of twenty-three locks and dams at a total cost of $5,106,422. Up to June 30, 1909, $401,372 had been expended, with only 4 per cent. of the project completed. I quote from the report of the Army Engineer Corps for 1909:

"On account of the numerous rapids, this part of the river has never been navigable. As yet, no benefit has been derived from this improvement and its value is entirely dependent on the completion of the entire system. Amount (estimated) required for the completion of the existing project is $6,059,913."

In short, at such an enormous cost, Congress proposes to "improve" a stream upon which nature never intended that a boat should ply. It seems as though Congress ought at least to limit its appropriations to rivers already in existence and not extend them in an effort to create other rivers never intended by nature.

The Illinois and Mississippi Canal, more familiarly known as the Hennepin Canal, is one of the most expensive monuments of the world to legislative folly. The object of this canal is to furnish a link in a navigable waterway from Lake Michigan to the Mississippi River at the mouth of the Rock River in Illinois. The River and Harbor Act of 1890 made the first appropriation for the construction of this enormous undertaking, and active work was begun in 1892.

To the close of the fiscal year of June 30, 1909, $7,401,100 has been expended. The prophecies of the promoters of this ambitious waterway sound very much like the prospectus of a company formed to extract gold from the water of the sea. The Honorable Jeremiah H. Murphy, of Iowa, was a Member of Congress elected on the campaign pledge of securing the construction of this artificial waterway. He declared that it would result in an annual saving to the people of the United States of $20,000,000 a year. The Governor of Iowa at that time, while less optimistic, was extremely generous in his predictions. He placed the annual saving at $15,000,000 a year.

At that time the chairman of the Committee on Rivers and Harbors was General T. J. Henderson, who lived in the Illinois district traversed by the proposed canal. He dominated that committee. The canal was begun — not because there was any widespread demand for it, but because of its influence upon his own personal and political welfare.

The canal was filled with water and formally opened to navigation October 24, 1907. And during the calendar year of 1908 a total of 8,512 lockages were made at the thirty locks and emergency gate. Of the total lockages, 3,478 were made for United States boats and 5,034 for commercial boats; 720 of the lockages were made for commercial steamboats and 689 for barges. The remainder were for houseboats, gasoline launches, and rowboats.

Scarcely less startling are some of the lessons to be drawn from rivers where open-

channel navigation has been secured by government improvement. The Red River, between its mouth and Fulton, Ark., a distance of 505 miles, flows through a fertile region rich in cotton, sugar, and other agricultural products. The Government first undertook its improvement in 1828. Since that time $2,548,377 has been expended on this section of the river. In 1908, $78,203 was expended for maintenance and improvement. Yet the traffic on this stretch of over 500 miles for 1908 was almost negligible. Exclusive of saw-logs, the commerce was made up of 6 tons of cotton; 300 tons of cotton-seed; hides and skins, .05 of a ton; provisions, 6 tons; grain, 18 tons; miscellaneous, 511 tons — a grand total of 841 tons. Thus it seems that the Government expended $93 for each ton of freight carried on this section of the river, exclusive of logs and timber. This estimate is based upon the mere cost of maintenance. Adding to this interest at 3 per cent. on the total cost of the improvement, it cost the Government the incredible sum of $183 per ton. Yet, despite the miserable showing of the Red River, an expenditure of over $1,928,869 has already been made for improving the Ouachita River, a tributary of the Red, in Arkansas and Louisiana.

The Arkansas River, passing through Oklahoma and Arkansas, and approximately one thousand miles in length, has received the bounty of Congress to the extent of $2,476,880. Yet in the last year its total commerce was 92,455 tons, approximately the same as the modest Raccoon Creek of New Jersey, upon which the total appropriations to date have been but $26,271.

The Mississippi River, famed in history and tradition, is a notable object-lesson for the student of American waterways. On the entire river between St. Paul and New Orleans the Government has expended more than $90,000,000. On the stretch between the mouth of the Missouri and the mouth of the Ohio — approximately 205 miles — on which is located the city of St. Louis, $12,000,000 has been spent. And yet the traffic on this section of the river has been constantly decreasing. In 1880 fourteen times as much river freight was received and shipped at St. Louis as in 1909. In 1909 it amounted to but 374,093 tons.

RIVER BUSINESS, PORT OF ST. LOUIS

Year	*Total Boats Arrived*	*Total Tons Freight Rec'd*	*Total Tons Freight Shipped*	*Grand Total Tons*
1880	4,692	1,092,175	1,038,350	2,130,525
1881	3,951	1,208,430	884,025	2,092,455
1890	3,201	663,730	617,985	1,281,715
1891	2,900	592,140	512,930	1,105,070
1900	2,217	512,010	245,580	757,590
1909	.....	.....	.....	374,093

The United States has spent more on this stretch of 205 miles of the Mississippi than the central government of Germany has expended for improving the Rhine from Strasburg to the frontier of Holland, a distance of 355 miles. Yet on this section of the Rhine the total tonnage in 1908 was approximately 40,000,000 tons as against less than 375,000 tons on the Mississippi. The United States has spent more on the Mississippi River than any government has ever spent on any other stream in the world. And we could take the 40,000,000 tons of annual traffic on the Rhine and handle it to better advantage on the Mississippi, with room for untold millions more. The simple fact remains that the Mississippi to-day possesses the channel, but it is not used.

The United States has spent $339,000,000 in the last fifteen years upon its rivers and harbors, and during this time the traffic on the rivers has steadily declined.

It should be said, however, that the expenditures for our harbors do not deserve the general condemnation which must be visited upon river or inland appropriations. The harbors have quite largely justified the Federal largesses of which they have been the recipients. Yet twice as much money has been expended upon our rivers as upon our harbors.

Some fifteen years ago it became apparent to the commercial and industrial interests along the Missouri River that this great stream should be utilized again for commerce. There had been a magnificent commerce upon it. To investors and practical business men it appeared likely that it would be profitable to restore boat lines and resume navigation. A company was organized and three boats were launched to ply the stretch between Kansas City and St. Louis. Everything augured success.

Between these two thriving cities the river then, as now, paralleled a magnificent railroad tonnage. To-day it parallels a larger tonnage of freight per day than any other equal stretch of river in the country.

What was the result of this ambitious yet reasonable undertaking? Immediately the railroad lines organized a powerful and effective opposition. They at once reduced their freight tariffs to one-third of the schedule which had former existed. They even carried the freight at almost any price which the shippers were willing to pay. The result was forcordained. The stock in the boat lines was soon worth practically nothing; the boats were sold and removed from the stream; competition ceased—and the old railroad freight-schedules were restored. And this history has been duplicated on practically every river in the country.

Now an improvement, estimated to cost $3,500,000, is projected for the Missouri River. This will give a permanent 6-foot channel the year round. Some even advocate a $20,000,000 improvement. The River and Harbor Bill of 1910 carries an appropriation of $1,000,000 for starting work, without making it clear which project is to be undertaken. The business men of Kansas City have organized a corporation with a capital stock of $10,000,000, of which $1,000,000 has already been subscribed, to operate boats on the river to St. Louis and intervening points. Logically the question suggests itself: will the shipping interests again play into the hands of the railroads? Whatever the alleged reasons may be for this improvement and whatever time may demonstrate, the real motive is the regulation of railroad rates between St. Louis and Kansas City.

To make river appropriations for the purpose of regulating railroad freight-rates is to admit that the courts of the country and its laws are so weak and so inefficient that we cannot control the railroads.

Senator Burton, the recognized authority upon waterway transportation, who has made a life study, not alone of American, but also of European rivers and harbors, and who led the fight on the last "Pork-Barrel" appropriation, has offered two suggestions for the relief of the waterways from unfair railroad competition.

The first is that the Interstate Commerce Commission shall be given the power to fix minimum railroad-rates where water competition exists, in the same manner as they now have the power to determine maximum rates. An analogous system prevails in France, where the railroads are compelled to charge 20 per cent. more than boat lines for transporting freight between competing points. The American people are not prepared for such radical legislation as that which has maintained the prosperity of French waterways, but if this suggested power be conferred upon the Interstate Commerce Commission it will at least prohibit the economic phenomenon of railroads carrying freight between given points at an absolute financial loss.

The second suggestion is that the railroads be forbidden to increase a rate when it has once been lowered, where the manifest purpose of the reduction was to destroy waterway competition. This is similar to the system practised in England, where the railroads are not permitted to raise rates once lowered except on the approval of the boards of trade. In Germany and Belgium, with the states owning the railroads and controlling the waterways, the railroads are not permitted to carry certain coarser classes of freight which lend themselves readily to transportation by boats.

But besides the railroad competition, American rivers suffer under natural disadvantages.

Rivers follow a natural channel which is fixed. Railroads can be built in any direction connecting the metropolis with the smallest and most inaccessible hamlet, coal mine, or forest. Branch lines, switches, and enormous terminal facilities can be readily constructed. The importance of terminals is a point generally overlooked by those who have given but superficial attention to the question of waterways. Terminal values of railroad properties overshadow in value the roadbeds. Further, freight can be more readily transferred from one railroad to another than from boats to railroads. By this is meant not alone the mere physical transfer of goods, but also the through-haul of cars without the necessity of breaking bulk, and the industrial organization which permits

through-billing over various roads, prorating, and the settlement of joint accounts. On some of the most important rivers of the country the oscillation in their levels is so great and so uncertain as to make it almost impossible to establish suitable terminals or proper machinery for loading and unloading boats. Thus the variation in the Ohio River at Cincinnati is more than 60 feet; that of the Mississippi at St. Louis, 43.92 feet; between Memphis and Helena, Ark., 54.75 feet; at Vicksburg, Miss., 58.98 feet; and at New Orleans, 21 feet. So it is impossible to build a terminal which will at all times accommodate river traffic on a stream whose level is so variable and uncertain. What may approximate the level to-day will be under water to-morrow and forty or fifty feet above water on some day following.

Another handicap under which rivers naturally suffer is the fact that distances traversed between terminals are usually shorter by rail. The most notable example of this condition is to be found on the Mississippi, with its riotous extravagance of distances. For example, by rail it is only 396 miles from Memphis to New Orleans, while by river the distance is 734 miles, almost double. Between St. Louis and New Orleans the rail distance is 699 miles, while the river channel measures approximately 1,200 miles.

If Congress should make Senator Burton's suggestions into law or find some other method of protecting the water traffic from unfair railroad competition, it would seem wise to spend money upon the improvement of those rivers whose natural conditions will allow heavy traffic, but not before then.

This being done, a systematic plan of improvement must be devised — a plan which deals with rivers from source to mouth as one continuous whole, and which considers their value not only for navigation but for the manifold other uses to which they can be put. First, the main streams should be improved, and then the branches; and these improvements should be confined to cases where there is promise of adequate commercial and traffic development. There should be no more cases of 6-foot channels in branch streams and 4-foot channels in main streams. There should be a standard of depth and width of channel so that one type or class of boats of standard gauge may ply all streams, and so that commerce may be billed through from various points having water communication. Projects undertaken should be pushed to rapid completion. Dribbling appropriations should be eliminated and driven to the limbo of disrepute.

President Taft has spoken in no uncertain terms on the vicious features of our river and harbor legislation. He said:

"I do think we have now reached the time in the history of the development of our waterways when a new method ought to be adopted. . . . This improvement of waterways, the improvement by the irrigation of arid and sub-arid lands, and all this conservation of resources, is not for the purpose of distributing 'pork' to every part of the country. Every measure that is to be taken up is to be adopted on the ground that it is to be useful to the country at large and not on the ground that it is going to send certain Congressmen back to Congress, or on the ground that it is going to make a certain part of the country during the expenditure of that money prosperous. . . . The method I am in favor of is this: That we should take up every comprehensive project on its merits, and we should determine, by all the means at our command, whether the country in which that project is to be carried out is so far developed as to justify the expenditure of a large sum in carrying out the project, and whether the project will be useful when done."

A decided step toward better things would be the inauguration of a system of coöperative improvement by the Federal Government and the localities immediately benefited. In the first place, the Federal Government should not impose a tax on the country at large for the exclusive benefit of a restricted locality. Worthy projects will receive the financial indorsement of local interests. Unworthy projects deserve no consideration. Thus many "improvements" now most insistently demanded would not be advocated if the localities interested were taxed for a share of the cost. Cities or local boards of trade should furnish adequate terminals, warehouses, and facilities for the economical and scientific loading and unloading of freight. This method of participation between the central and local governments has been followed with commendable results in France, Belgium, and Germany. In France, for example, the

local interests involved are required to contribute 50 per cent. of the actual cost of all inland waterway improvements, the National Government furnishing a like amount. This principle merits the flattery of imitation by the United States. Let the Government reserve its bounty for those who demonstrate a desire and a capacity to bear their proportion of the burden. A modified form of this theory has been practised on the lower Mississippi, where the states interested have contributed 50 per cent. or more of the cost of levees necessary to protect the banks from the ravages of the stream. This practice should be extended to all waterway projects.

But whatever the future may suggest, one thing is certain — the "Pork-Barrel" must go. Every dictate of moral and political conscience demands a revolution in the system of making river and harbor appropriations. The whims of Congressmen, the political exigencies of certain districts, and the selfish demands of local constituencies must give way to a scientific policy of improvement. The present system is based on the theory of private spoils and sectional greed. The National Treasury should not be considered a clearing-house for the discharge of political obligations. The river and harbor bills must not be regarded as the turgid dividend from which all parties, states, and localities are licensed to draw their tainted share. These bills must not conform to the size and characteristics of the electoral college.

A CONGRESSMAN'S LETTERS

SHOWING THE REASON WHY THE "PORK-BARREL," SPECIAL-TARIFF FAVORS, AND PRIVATE-PENSION BILLS BECOME LAW

BY

A MEMBER OF THE HOUSE OF REPRESENTATIVES

The author of this article has had more than ten years' service in the House of Representatives. He is a member of several of the most important committees and has the reputation of "getting things" for his constituency.

EVERY Congressman receives approximately fifty letters a day. Seventy-five per cent. of these are from his constituents. At least nine of every ten of these are requests, and every request is for some special favor for his district or for some one in it, to be paid for by the National Treasury. All over the United States constituents regard their Congressmen as solicitors for their districts, and not primarily as law-makers for the nation. They want tariff protection for their local industries, pensions for their war veterans, and appropriations for their rivers and harbors and for public buildings. They send men to Congress to get these things, and if one man fails to get them another man who will get them is found to take his place.

The Payne-Aldrich Tariff Law is a distinctly unpopular measure in many sections of the country. It has been more widely discussed and more bitterly criticised than any legislative act for years, not less among my constituents than elsewhere. Five great industries produce practically the entire wealth of my district. All these industries, which for obvious reasons I will not specify, are beneficiaries of "pinnacle" tariffs. When the Tariff Law was under discussion

the secretary of a powerful and eminently respectable commercial association of the principal city in my district wrote me the following letter, dated May 22, 1909:

"I have been instructed by the board of directors of this association to advise you that at special meeting May 20th, a resolution, copy of which is enclosed, was unanimously adopted, urging our Representatives in Congress to use every endeavor to have the present tariff on [mentioning three of the products of the industries referred to] increased one cent per pound and the present tariff on [mentioning the other two products] increased half a cent per pound. I wish to further advise you that we have heard from Senator —— and he informs us that he will take care of this matter in the Senate."

The tariff on two of these highly protected products was increased half a cent a pound. There was no "downward revision" on any of the other products referred to. After the Payne-Aldrich Bill was passed and criticism of it became severe, the secretary of this same association wrote me again, under date of March 16, 1910:

"It has been brought to the attention of the board of directors of this association that you consistently voted with the House organization on the Payne-Aldrich Bill. This bill is without doubt the most iniquitous measure ever enacted by Congress. I am directed by the board of directors of this association to request you to explain by letter, at your very earliest convenience, your reasons for joining with the reactionaries. No action will be taken by the association until after receipt of your letter."

I did not reply to this letter. The "incident was closed" when political friends of mine pointed out to the directorate of the association that a reply from me would necessarily contain reference to the increased tariffs (which I was in part responsible for) which this "most iniquitous measure" gave the products of my own district.

I have before me excerpts from two editorials, clipped from a great "independent" daily published in the principal city in my district. The first was published while the schedules affecting the highly protected products of my district were being considered. It reads:

"The adoption by the Chamber of Commerce of resolutions commending Representative —— [myself] for his intelligent efforts to have an increased tariff of half a cent per pound placed on [mentioning two products of my district] is a fitting tribute to the hustling qualities of our veteran Representative."

The following is an except from the same paper, published after the Payne-Aldrich Law became operative in its entirety:

"The reactionary Congressman has had his day. The progressive voter will soon have his. Representative —— [myself], as shown in another column, is a member of the legislative banditti responsible for the Payne-Aldrich measure."

The products of my district are not controlled by the "Great Interests." Yet they received increased protection through the efforts of the Congressional representatives of my region of country. These Representatives, myself among them, were in turn compelled to vote with those members who had assisted us in satisfying the requests of our constituencies, so that they might in turn satisfy their constituencies. With 391 constituencies fighting for advantages for their products, how could the final measure be "national" when the "national interest" was never considered by a single constituency? The Representative in Congress who had failed to obey the behests of his constituency would have been branded as a traitor and would have been retired to private life at the first opportunity. I do not think that a single Representative in Congress can produce a single communication from his constituency, written when the bill was under consideration, urging him to consider the Tariff Bill from a non-local standpoint and without special regard to the products of his district. Even the Southern Democratic members from Texas voted for an increased tariff on hides, and those from Louisiana and Mississippi voted for an increased tariff on lumber.

As in the tariff, so it is in all other legislation. The dictum of the "constituency" to the Congressman is: "Get all you can for *US*." There are no restrictions placed on his methods of getting it. The term "Billion-Dollar Congress" is employed as an indictment of legislative extravagance. If the Representatives in Congress should fulfil one-tenth of the demands for raids on the National Treasury made on them

by their constituencies, we should be a bankrupt nation at the close of any single session.

The Pension Bill is a good sample. The appropriation for this year is $155,000,000. No red-blooded American begrudges the money paid to fighting-men who suffered disability either from wounds received in battle or from campaign hardships. The nation offers a home to every old soldier and has in every way treated him with the utmost liberality. But much is heard about "pension frauds," and the accusing finger is finally pointed at Congress. Fraudulent pension claims, it is charged, are pushed through by Congressmen, so that they may pose as friends of the veterans and capture the "old-soldier vote." I doubt if there is a Member of Congress who is not forced several times every week to rebuke some constituent for attempting to enlist his services in the perpetration of some pension fraud — not in such a way that the constituent can be reached by the law, but by plain fraud nevertheless. For example, here is a letter I received from a minister of the gospel, the pastor of a large and wealthy congregation:

"My dear Congressman: I received a call from James H. —— several days ago, and he told me that he had received a very unsatisfactory letter from you regarding his chances for getting a pension. Now, Congressman, while I know he deserted during the second year of the war, yet there must be some way the matter can be covered up and —— be given a pensionable status. He is at present a charge on my congregation. Every one seems to be able to get a pension. Why not he? Do what you can for him, and oblige."

Here is another pertaining to the same case. This is from a prominent attorney:

"I understand that you have turned down ——'s request that you try and get him on the pension rolls. I know that he is a thoroughly worthless whelp and that he deserted from the army during the war. That is not the point. He has worked on the sympathies of some influential people here and it is 'good politics' to get busy. Uncle Sam will not miss the money and you have a hard fight ahead of you here. Every vote counts, so do what you can for this fellow. Let me hear from you, as I promised several parties to write to you about this matter."

I have hundreds of such letters filed away. So has every other Congressman. I have never received but one letter against the granting of a pension. It ran:

"*Dear Sir:* You have ruined my life. I was to be married next week. Now you have gone and had widows' pensions raised to $30 per month. That is a wilful temptation to every woman who marries an old soldier to murder him. I am afraid now to marry and my life is ruined. Can't this law be changed? No old soldier wants it. Please answer."

If the demands of reputable men and women made on Congressmen to get pensions for men in no way deserving them were complied with, even in small part, and the pension laws could be successfully evaded, we should have a pension-roll of $500,000,000 per year.

As persistent if not so numerous as the pension requests are those for expenditures upon local rivers and harbors. Usually these requests are not made by letter, but by delegations sent to Washington for the purpose. The "mud-money" is sought by personal application, and the pressure is consequently all the more severe. The Congressman applies to the twenty members of this great distributing Committee. There is, figuratively speaking, between $50,000,000 and $60,000,000 on the table to be divided. The Committee divides it so that every one is satisfied, at least to a reasonable extent.

While many harbor enterprises and some river improvements completed with benefit to water-traffic can be credited to the Rivers and Harbors Committee, yet the national interest has never been considered paramount in the distribution of the huge appropriations. If such had been the case, untold millions would have been saved the nation and our rivers and harbors would to-day be in a more advanced stage of development. The country — in this legalized and encouraged extravagance, as in the pensions and the tariff — is paying tremendous annual tribute to local selfishness.

This spirit of "get something" from the Government through your Congressman often descends from $100,000 river appropriations to the level of petty larceny. A wealthy constituent of mine once wrote me:

"Am leaving in a hurry for New York. I am leaving an extra suit-case in the cloak-room at the Willard. I do not expect to return

this way, so will you kindly 'frank' suit-case home for me? If you have any scruples, fill it with public documents. That will make it 'official business.'"

The suit-case is still there.

This may be accepted as a petty act evidencing the spirit of "beating the Government" in but a single individual. It is but one of hundreds. It is a fair example of the same spirit which creates the "constituency interest" which is made paramount to the national interest.

This letter was received from a man whom I knew to be but little interested in public affairs:

"Will you kindly send me copies of all government reports which are handsomely or attractively bound?"

An inquiry from me as to what he wanted with books which would aggregate tons in weight brought the reply that he wanted them for "dummies" to dress up unoccupied shelves in his library.

Another request from a then unknown constituent asked that the writer be placed on the "free mailing-list" for all public documents. This would mean that he would receive several tons of documents every month. An investigation disclosed that he was engaged in the manufacture of an article made from waste-paper pulp. His idea was to have the Government supply him with "free raw-materials."

But the question will naturally be asked: Does not the Congressman stultify himself through allowing local interests to affect his attitude toward the national interest? Perhaps so. But there are extenuating circumstances. Few men come to Congress who are not honestly fired with ambition to do "something big" — to become actively and prominently identified with some great national movement, or to fight through to passage some great economic reform. They soon become legislative specialists, and their most intense thought is dedicated to some particular measures. It may take several sessions of Congress before the measure to which they have devoted months of study comes before the House with a prospect of passage. That is to be this man's great work. Is it surprising that he will submit to those conditions which he would otherwise spurn, so that he may satisfy his ambition to do something really big for his country? His constituents are probably chiefly interested in getting a new post-office building, or something like that.

Until the American people themselves become more national and less local, until constituencies cease to regard their Congressmen as solicitors at the National Treasury, Congress will continue to enact iniquitous groups of local favors into national legislation.

SCHEDULE I — THE COTTON TARIFF

HOW TWO RHODE-ISLAND MANUFACTURERS, WITH SENATOR ALDRICH'S HELP, RAISED THE PRICE OF THE PEOPLE'S CLOTHING FOR THEIR OWN PARTICULAR BENEFIT

BY

SAMUEL M. EVANS

HERE are two true stories of the effect of the new Cotton Schedule upon the people of the country — stories which can be duplicated in any part of the United States.

A census enumerator recently knocked at the door of a modest but well-kept cottage in the workingmen's quarter of Cleveland, O. A woman opened the door.

"The census man? Come right into

the kitchen, and I'll talk to you while I am finishing my morning work. Sit down. You go back to Washington and tell the man that sent you here that I can't afford to buy meat more than once a day; that my husband can't afford to buy a new suit; that the price of stockings and underwear and even sheets and pillow-cases is so high that we can hardly afford to buy them. Tell him that I have three little girls in school and that ordinary cotton-goods costs so much more this year than last year that we have to skimp and scratch and save every penny to make them look decent.

"Now that is all the information you are going to get out of me," she panted.

A business man in Washington, D. C., who has difficulty in securing ready-made shirts with long enough sleeves, has his shirts made to order. Last month he went to his shirt-maker and asked to see the samples. He wanted to duplicate two shirts that he had had made at the same place last year. The shirt-maker told him that they would cost him $3 each. Last year he paid $2.25 each for the same material. The shirt-maker explained that the goods that he wanted had a few stripes of mercerized threads in it and that this was responsible for the increase in the cost. All his shirting material, he said, cost him on an average 33⅓ per cent. more this year than last year, if it had any mercerized threads in it; and, if it had any figures woven in the piece, the advance in price was still sharper.

These are two actual cases. The cloth for the children's dresses is made by the Lorraine Manufacturing Company of Rhode Island, situated midway between Pawtucket and Providence. The cloth of which the shirts were made is manufactured by the Manville Company of Woonsocket and Manville, R. I. Mr. James R. MacColl is manager of the Lorraine Company, and Mr. Henry F. Lippitt is president of the Manville Company. The reason that the price of cotton cloth has gone up is that these two men wrote clauses into the Cotton Schedule of the Payne-Aldrich Tariff which increased all the duties on cotton goods and laid a tax upon the whole country for their own particular benefit and the profit of their associates.

WHO THE TARIFF-MAKERS WERE

This is the story of how they accomplished this feat:

Messrs. Lippitt and MacColl of Providence, R. I., are members of the Arkwright Club of Boston, which contains in its membership men who practically control the cotton-yarn and cloth industries of the United States. According to a letter signed by Messrs. MacColl and Lippitt, written to the Ways and Means Committee of the House of Representatives, its members own three-fourths of the spindles of New England. In that club are represented the powerful group of mills owned by the American Thread Company, the New England Yarn Company, and the William Whitman mills. These three concerns control the cotton-yarn industry of the United States and are closely allied to the other group of mills that control the cotton-cloth industry. The cotton-cloth mills are those owned by six families, which control the cotton-cloth industry of Rhode Island, and a group of mills controlled by Clarence Whitman, brother of William. (William Whitman is the author of Schedule K, the Wool Schedule of the Dingley Tariff, which was left unchanged in the Aldrich Tariff and which the President characterized as "indefensible.") Among the most powerful of the Rhode Island mills, are those of Messrs. Lippitt and MacColl. The Dingley Tariff was, in the main, satisfactory to Mr. Lippitt, for when it was framed he was allowed to put his interests above those of the people of the nation and write the schedule on cotton cloth himself. In a very frank statement made to a committee of manufacturers and importers several years ago, when a decision of the General Appraisers was in dispute, he said:

"I know that I am right because I wrote the Cotton-Cloth Schedule myself."

When it became evident that the tariff was going to be revised, Mr. Lippitt was selected by his brethren of the Arkwright Club to maintain the schedules that were so much to their advantage.

Mr. C. Minot Weld, president of the New England Yarn Company, a member of the

Arkwright Club, appeared before the Ways and Means Committee of the House and secured advances in the duties on cotton yarn that prohibited the importation of any yarn by independent manufacturers who might want to buy their yarn abroad and "buck" the Cloth Trust.

On December 1, 1908, Messrs. Lippitt and MacColl appeared before the House Committee on Ways and Means in Washington. They testified that the cotton manufacturers did not want an increase in the duties on cotton cloth; that they were perfectly satisfied with the way things were working out under the Dingley Law. Mr. Lippitt said:

"I am not appearing here to ask for an increase in the duties on the cloth clauses of the Cotton Schedule. I think that while there are importations going on under them it is reasonably regulative of the cotton trade. The importations are not so large that we feel justified in asking that the duties be increased, but we would not like to see them decreased. . . . We ask, therefore, that the present schedule shall not be materially changed."

Of the form of the cotton schedules Mr. Lippitt declared:

"*Some minor features are still in controversy and may need elucidation.*"

This satisfaction with the Dingley rates was natural enough; for, as we have seen, Mr. Lippitt prepared them and they had been successful in prohibiting any large importation of cotton cloths. Whether or not the "minor features" of which Mr. Lippitt spoke would need "elucidation" depended upon whether or not the courts decided in favor of the cloth manufacturers in a law-suit then pending.

THE DISTURBING LAW-SUIT

In order to understand this law-suit, which is closely allied to the final form of the Payne-Aldrich Tariff, it is necessary to understand the outlines of the Dingley Tariff Law. Cotton cloth was divided roughly into classes according to the number of threads to the square inch. The greater the number of threads in any fabric, the finer its quality and the higher the duty. Each class was again subdivided according to the weight of the goods per yard. The greater the number of yards of cloth per pound, in any class of a given number of threads per square inch, the finer the quality of the goods and the higher the duty. In addition to this, each class was divided into unbleached, bleached, and colored goods. Bleached goods of any given number of threads per square inch and number of yards per pound paid a higher duty than unbleached, and the colored cotton cloth a still higher duty. The whole theory of this classification is that finer goods are more costly and should pay a higher duty.

In addition to these duties, each class of cotton goods, under the general classification according to the number of threads, was protected by an *ad valorem* proviso at the end of each paragraph, providing that unbleached goods of that class, no matter what the weight, if valued above a certain figure, should pay a duty not less than a certain per cent. of the value of the goods, and bleached or colored goods a higher per cent. These *ad valorem* duties were so arranged that they amounted to from 30 to 50 per cent. of the value of the goods.

Mr. Lippitt's mills had been manufacturing a large amount of cheap dress-goods known as madras. The shirts that the Washington man bought were made of madras. Madras of a cheaper quality is the same sort of stuff that is used for the curtains at your bungalow window, with a large, variegated, wall-paper pattern on it. The little figures in the shirt-goods and the wall-paper effect in the curtains are due to a little attachment on the loom called the Jacquard attachment. It puts the extra threads on the body of the fabric and cuts them off to make the figures shown on the cloth. The extra threads are superimposed on the body of the fabric, which is woven of coarse, unbleached cotton in the curtain goods.

Curtain madras had become increasingly popular in America during the last few years and, in spite of the tariff, it was beginning to be imported. It was entered at the custom-house as unbleached goods, because the body of the fabric was unbleached. The count of threads was determined by the count of threads in the body of the fabric. To give the American manufacturer protection against importations of this stuff still greater than the protection in the body

of the Tariff Law, the Dingley Law contained a section providing that cotton cloth "in which other than ordinary warp and filling threads have been introduced in the process of weaving" (no matter what the count of threads or weight) should pay an extra or cumulative duty of one cent per square yard if valued at not more than seven cents per square yard, and two cents a square yard if valued at more than seven cents.

And so, in addition to the regular duty, this material paid a duty of one or two cents per square yard additional, as the case might be.

In the summer of 1907 the Arkwright Club decided that these importations would have to be stopped. And so a suit was brought against Rusch & Co., importers, of New York, to recover a higher duty. The cotton manufacturers declared that these goods should be entered as colored goods because of the colored figures. Calling them colored would put them in a different classification with a higher duty.

Mr. Marion de Vries, of the Board of General Appraisers, decided against this plea, declaring that the extra section in the Dingley Law provided protection because of these extra threads. But Mr. Lippitt was undaunted. At any rate, Mr. de Vries later changed his view completely. In October, 1907, the officials at the Custom-House in New York decided to class these goods as colored goods. Two importers (Titus Blatter & Co., and Quaintance & Co., of New York) entered a suit against this new decision. On March 2, 1908, Judge Hough, of the Circuit Court for the Southern District of New York, decided that these goods could not be classed as colored. "The Board decisions under review are irreconcilable," said the Court in rendering the decision. To the suggestion by the manufacturers that a "reasonable interpretation" must be given to the word "colored," the Court said: "This can only mean that some appraiser shall look at the cloth and judge whether it is or is not sufficiently colored with colored designs to be called 'colored cotton cloth.' Such a method of decision does not recommend itself."

The question was taken to the Circuit Court of Appeals of the Second District and argued before Judges Lacombe, Coxie, and Ward. Here again the Court held that the cloth could not be classed as colored and be made to pay duty as such. This was on January 12, 1909, after Messrs. Lippitt and MacColl had appeared before the Ways and Means Committee and after the public hearings on the Tariff Bill had been closed.

The case was appealed to the Supreme Court of the United States, but Mr. Lippitt had little hope of winning there because all the previous decisions of the Supreme Court had hewn close to the letter of the Tariff Acts, and no room had been allowed for "reasonable interpretations" of the various schedules. This made it necessary for Mr. Lippitt to have the "minor points" he had spoken of "elucidated" in the new Tariff Bill.

MR. LIPPITT WRITES TO MR. PAYNE

On January 15, 1909, three days after Judge Lacombe's decision was handed down and a week before the decree was entered by the Court, Messrs. Lippitt and MacColl wrote, from Providence, R. I., their now famous letter to Chairman Payne of the House Committee on Ways and Means. They signed themselves as members of the Arkwright Club of Boston. The letter was received by the Republicans on the Ways and Means Committee, who were at that time in secret session framing the bill, and it did not appear in the printed hearings published by the Committee. Subsequently some of the "Progressive" Senators found it tucked away in a volume labeled "Appendix" to the hearings. The letter set forth how Messrs. MacColl and Lippitt desired to have the minor points elucidated. They proposed that the Tariff Act be amended in the following particulars:

"The terms bleached, dyed, colored, stained, painted, printed, or mercerized, wherever used in the paragraphs of this schedule, shall be held to include all cotton cloth having bleached, dyed, colored, stained, painted, printed, or mercerized thread, threads, yarn, or yarns in any part of the fabric and all fabrics which have, wholly or in part, prior, during, or subsequent to fabrication, been bleached, dyed, colored, stained, painted, printed, or mercerized."

This paragraph, of course, was intended to put all the Jacquard-weave goods with

even a colored thread under the colored classification in the new law, irrespective of the decision of the Supreme Court as to what their status had been under the Dingley Law.

The next paragraph they suggested was:

"The term thread or threads, as used in the paragraphs of this schedule, with reference to cotton cloth, shall be held to include all filaments of cotton, whether known as threads or yarn or by any other name, whether in the warp or filling or *otherwise. In determining the count of threads to the square inch in cotton cloth, all the threads, whether ordinary or other than ordinary and whether clipped or unclipped, shall be counted.*"

This section was to raise the classification of the Jacquard-weave goods by increasing the count of threads per square inch; for previously the appraisers had counted only the threads in the body of the cloth.

To make assurance trebly sure, the letter suggested a further paragraph providing that:

"*Cotton cloth, mercerized or subjected to any other similar process, shall pay one cent per square yard additional cumulative duty to that therein imposed upon such cotton cloth where the same, not so mercerized, is subjected to other similar process.*"

In other words, Messrs. Lippitt and MacColl wanted the new tariff so worded that, no matter what the decision of the Supreme Court might be, Jacquard-woven goods would have to pay duty as colored goods; and they added an extra hitch to the rate by the provision that the superimposed threads of the wall-paper figure should be counted, and they clinched the whole matter by adding the one cent a yard cumulative duty to all cloth that had a single mercerized thread in it.

It can be seen at a glance that *this arrangement would raise the duties on the entire Cotton Cloth Schedule.* Goods that had previously been entered as unbleached would have to pay duty as colored cotton and all figured goods would be put in a class of a much higher count of threads where the duties were higher.

Messrs. Lippitt and MacColl suggested one more amendment to the bill. There is an old paragraph in the Dingley Law providing a duty of 50 per cent. *ad valorem* for "curtains and table-covers." They suggested that this needed changing because many tapestries that ought to be protected under it were being brought in as cotton goods. And so the addition was made. "and Jacquard-figured goods, in the piece or otherwise, suitable for use as upholstery goods *or as draperies or covers.*"

This would certainly protect Mr. Lippitt's goods if the other paragraphs should not be enacted, because dress goods are called draperies by many importers and tradesmen. There is every evidence that the changes suggested in the "curtain clause" by the members of the Arkwright Club were for the purposes of making assurance doubly sure and of setting up a straw man to be knocked down in case the trick should be discovered when the Tariff Bill was under discussion in Congress. The "little changes" suggested would have raised the duties far beyond 50 per cent. for Jacquard-figured goods; but, if the "joker" were discovered, they would have the curtain clause to fall back upon; or they could offer it as a sacrifice in a compromise on the whole schedule.

The letter from Providence said:

"The slight additional changes in the wording of the first paragraph as here presented are simply designed to meet legal questions which have been brought up in connection with it. Especial importance is attached to the second paragraph defining color."

The letter vouchsafes the information that Mr. Marion de Vries approved the "little" changes suggested.

"The alterations in paragraphs 310 and 313," it declared, "are substantially the same as contained in the recommendations of Mr. Marion de Vries, of the Board of General Appraisers, so that the language and form have his approval. . . . They are designed to make clear some disputed points in the present act, and have been drawn after consultations with people experienced in the details of the administration of the present act."

The letter adds naïvely, "*we hope they are worded so as to effectually accomplish the object desired,*" and closes with an appeal "that the rates of the Cotton-Cloth Schedule of the Bill of 1897 shall not be reduced."

A tariff bill is long and very complicated. While they are very important in their

operation, the "minor points" suggested by Messrs. Lippitt and MacColl are really minor points if considered in relation to the bulk of the Tariff Bill. It is utterly impossible for any man to become an expert in all branches of industry touched by the Tariff Law, and so the Ways and Means Committee was necessarily forced to rely upon the recommendations made to it by those who were supposed to know. Consequently, the Republicans of the Committee swallowed the recommendations of Messrs. Lippitt and de Vries whole, and when the bill was reported to the House it contained the little "elucidations" substantially as Mr. Lippitt had asked, even to the provision concerning the Jacquard cloths in the curtain section.

It might be pertinent to say here that practically no Jacquard-figured upholstery goods had been imported into this country for years because the duty was so high that these goods could not enter and compete with American tapestry-goods. It was the Jacquard-figured dress-goods that Mr. Lippitt wished to prohibit.

Except for these all-important "elucidations," which seemingly were not understood, the House Committee took the Arkwright Club at its word, and the duties of the Cotton-Cloth Schedule that are apparent on the face of the bill were not raised by Mr. Payne.

But several members of the House of Representatives, men of a prying disposition, investigated the Cotton Schedule and discovered the little "jokers" about the counting of threads and the color of the Jacquard-weave goods, and explained their findings.

MR. PAYNE DISCOVERS THAT HE IS FOOLED

Mr. Payne called a hurried meeting of the Republican members of the Ways and Means Committee. He declared that he had been fooled and that he would stand for no such underhand legislation. The next day he got up in the House and moved to strike from the bill those two provisions about the counting of threads in cotton cloth and giving a new definition of "colored, mercerized, etc." His motion prevailed.

There was little time for the House to debate the bill and no one thought of looking behind the "curtain schedule" for another "joker" or of inquiring whether the process of mercerization was so expensive that it needed a protection of one cent per square yard. So these two provisions — designed to secure the same ends as those taken from the bill — were left in, and in this shape it went over to the Senate. This was a half defeat for the adventurers from the Arkwright Club. But they came from Providence, R. I., whence hails Senator Aldrich, and therefore they did not despair.

The House Bill passed on April 9, 1909, and was sent over to the Senate the next day. Two days later, Senator Aldrich presented his Bill from the Finance Committee. He did not pretend that he had looked over the House Bill in those two days. The Republican members of the Finance Committee met behind closed doors while the House was struggling with its bill, and various manufacturers appeared before the Committee. No record of what occured is available anywhere. However, Senator Aldrich stated later to the Senate that no cotton-cloth manufacturers had appeared before the Committee at all. The Cotton Schedule in the Senate Bill, he declared, had been drawn by the Committee on the advice of the government experts who were in Washington helping him. The chief of these was Mr. Marion de Vries, who came from his duties at the New York Custom-House and who stayed by the right hand of Senator Aldrich during the fierce fight made on the Tariff Bill in the Senate.

THE "ELUCIDATIONS" APPEAR AGAIN

When the Senate Bill was examined, it was discovered that a fine hand had been at work. Every one of the little "jokers" suggested by Messrs. Lippitt, MacColl, and de Vries, including those thrown out in the House of Representatives, was snugly ensconced in the bill.

In addition to this, all the *ad valorem* provisos of the Dingley Law which had been left unchanged by the House of Representatives had been converted into "specific duties" by Senator Aldrich, with an artificial dividing-line as to the value of goods.

Thus a piece of cloth falling in a given class according to the number of threads per square inch, its weight, and its character

as to color, which would have paid a duty of 40 per cent. *ad valorem* under the Dingley Law, was required to pay a specific duty of a certain number of cents per yard, varying according to the value per yard. Senator Aldrich explained that his specific duties were not higher than the *ad valorem* duties of the Dingley Law, but that they had been changed simply for the sake of uniformity.

Some members of the Senate have an inclination not to accept as gospel every word that falls from the mouth of the Senator from Rhode Island, and these "Progressives" got to work with their pencils and paper and changed Senator Aldrich's specific duties back to *ad valorem* duties and compared them with the Dingley rates. This process disclosed the fact that Senator Aldrich's transformation had increased the duty on cotton goods in sixty-two classes all the way from 25 to 459.96 per cent. It was further discovered that Senator Aldrich had eliminated altogether that class of goods counting less than fifty threads to the square inch, thus throwing these cheap goods into the next highest class of one hundred threads or less to the square inch. *This simple operation had the effect of just doubling the duty on the cheapest cotton-goods manufactured.*

The "Progressives" announced the result of their mathematical calculations to the Senate. A mighty howl went up. Then Senator Aldrich explained further. The "Progressives," he said, were terribly mistaken. Custom-house experts had presided at the transformation of the *ad valorem* rates into specific rates and there were no increases. Mr. Marion de Vries (and Mr. Aldrich referred to him as "Judge de Vries") had assured him of this fact.

Then the "Progressives" asked the Bureau of Statistics to figure it out, and their original results were confirmed. In only two cases did the Aldrich duties agree with the Dingley *ad valorem* rates.

But Senator Aldrich stood his ground. On May 4th he declared to the Senate:

> "I expect before we are through with the consideration of this schedule to satisfy the Senator from Iowa himself (Mr. Dolliver) that these changes were all made in the interests of the American producer and that there is no increase in the rates of cotton cloth."

Senator Dolliver had already satisfied himself that the first part of the statement was undoubtedly true, but neither he nor the public at large has yet been convinced of the truth of the second part.

Senators Dolliver and La Follette sent to New York and got samples of cotton goods that had been appraised under both the Dingley rates and the Aldrich rates at the New York Custom-House. They showed graphically the increase in duties. *On mercerized goods the duties were increased on 118 classes of cotton cloth, or even on goods with a single mercerized thread in it.*

THE "LUXURY" "JOKE"

Then the greatest "joke" recorded in the literature of the Cotton Schedule was perpetrated. One day Senators found on their desks a book of estimates prepared by the Finance Committee of the Senate. It showed what purported to be the changes in the Dingley Law and the revenue that would be raised by the Aldrich Bill. Before every schedule in which an increase had been made, there appeared a capital letter "L." Reference to the top of the page informed the Senators that this meant "Luxury-articles of voluntary consumption." Reference to the Cotton-Cloth Schedule disclosed the fact that cotton cloth valued at more than seven cents a yard was a "luxury," according to the new standard raised by Senator Aldrich! But the "Progressive" Senators laughed the "L" out of court.

And then Senator Smoot came to the front. He declared that the Dingley duties had been too absurdly high in some places and that the Finance Committee had simply "equalized" them. Asked to point out where any duty had been lowered in the process of equalization, he could refer to no example. The equalization had been accomplished by raising the lower duties to conform to those which Senator Smoot declared were "absurdly high."

Meanwhile, on May 24th, the Supreme Court of the United States, by refusing to grant a writ of *certiorari* in the customs cases from the New York courts, had spoken the last word in the "colored-cloth cases" and upheld the contention that a single colored thread did not give a piece of cloth

place in the colored-cloth schedule of the Dingley Law. With this decision against them, the last hope of the venturers for victory in the courts was gone. It was necessary that they win in the Senate.

Senator Aldrich took the floor and declared that the changes had been put into the bill because of decisions of the courts that lowered the Dingley duties on cotton cloth. The bill, he said, was nothing but a return to the real Dingley rates as they had existed before the courts had "emasculated the law." A line of decisions was quoted to show this emasculation, chief among which were the colored-cloth decision of Judge Lacombe and a decision by Colonel Hartshorne, formerly one of the appraisers in New York, known as "the etamine decision."

It was discovered that the etamine decision had been rendered in 1904 when Hartshorne had classified all Jacquard-woven goods as etamines, which were provided for in the linen schedule and which bore a higher rate of duty. He arrived at this remarkable conclusion by defining etamines as "cloth with a hole in it." The decision was promptly overruled by the Board of General Appraisers, and Hartshorne was afterward separated from the service by Secretary Shaw because, contrary to law, he was interested in the linen industry.

In a mournful voice Senator Aldrich told the Senate that millions had been lost to the Government through these decisions. Pressed for figures, he sent anonymous newspaper-clippings to the Clerk's desk and had them read, and finally brought forth an affidavit from a subordinate in the New York Custom-House stating that, to the best of his recollection, anywhere from 6 to 30 per cent. of the goods imported into New York were madras goods and were affected by the colored-cloth decision. Senator Dolliver got a statement from the Treasury Department that the total amount involved in these cases was $55,000 worth of goods. The duty on this, which was the money in dispute, would have been about 10 per cent. Senator Borah asked the Treasury Department for information, and the Assistant Secretary of the Treasury replied that about $400,000 was involved in the case. Senator Dolliver, who had become engrossed in the search for accurate information, questioned the Bureau of Statistics, and it was discovered that the total value of goods imported in 1907 to which this decision applied was $356,000. The amount in dispute was 5 per cent. of this, instead of "millions."

During all this time Senator Aldrich had access to the books of the New York Custom-House. His force of custom-house experts occupied nearly an entire floor in the Senate Office-Building. He would produce nothing from the custom-house books. When other Senators tried to get at them, they found that, by order of President Taft, no information could be given out about the business of the New York Custom-House to United States Senators. Custom-house officers were not allowed even to talk except by written order of the President. Senator La Follette secured permission to get some information from a custom-house official, but found that the man had been specifically directed not to divulge any accurate information, but to give Senator La Follette simply the benefit of his recollection. Finally Senator Hughes looked up the briefs filed with the Supreme Court of the United States on both sides of the colored-cloth case. The Solicitor-General of the United States (acting in this case for the manufacturers) claimed that only $260,000 was involved, and counsel for the other side (which won) declared: "We frankly believe that not more than $20,000 is involved in the entire litigation on this issue, or about $5,000 a year.

And so, even though the machinery of the United States Government had been set to prevent Members of the United States Senate from getting information, Senator Aldrich's millions flitted away; and then the Rhode Island statesman declared that the cotton men had not known about these decisions when Messrs. MacColl and Lippitt told the Committee on Ways and Means that they desired no changes in the Cotton Schedule. The decision of Judge Lacombe had not yet been rendered, but it is evident that Mr. Lippitt had been following the course of events pretty carefully. Senator La Follette wired to the Board of General Appraisers in New York and found out that

when the appeal from Colonel Hartshorne's ridiculous etamine decision was heard in the court, the witnesses who upheld the definition that an etamine was "cloth with a hole in it" were George N. Duren, selling agent of Lippitt's mills, and J. R. MacColl.

WORKING IN THE DARK

These facts are set forth simply to show how well the business of private-tariff making had been planned by cutting off in advance many sources of aid from the fighters for the victims. That the United States Senate should be deprived of information on such an important matter was believed impossible before that time. But private-tariff makers always work in the dark as long as possible.

Senator Aldrich's next defence of his increases was the cry that labor in America costs more in the cotton-goods industries than it costs abroad. Senator La Follette showed, by reference to United States Census Bulletin 93, that the average weekly wage of all cotton-mill operators in the United States was $6.47 and that the average wage in England per week was $4.68. It was shown that operators work longer hours in this country, work from six to eight looms here, whereas they work but two in England, and that the New England mills employ more women and younger boys and girls than are allowed to work under the more humane laws of England. Senator La Follette finally showed that all of the cotton mills in New England, in twelve years, had paid for themselves in dividends. The talk of child-labor and profits silenced the "New England Oligarchy."

THE SLIGHT COST OF MERCERIZATION

Then the "Progressives" attacked the mercerization "joker." The silk-like threads that appear in a large proportion of cotton cloth sold in America are "mercerized." They are given their gloss by a bath in caustic soda — a very inexpensive process. About 79 per cent. of the yarns and cloths used by the trade, that is, by manufacturers of cotton cloth — are mercerized or contain mercerized threads. The "Progressives" found out first that this process costs less in America than anywhere else in the world; and, second, that it costs from seven-hundredths of a cent to less than a quarter of a cent per yard to mercerize cotton goods. If there are only a few mercerized threads in the piece, the cost is almost infinitesimal. The Lippitt-MacColl-de Vries joker provided an extra duty of one cent a yard for mercerized goods or goods that had even a single mercerized thread in the fabric.

When Senators La Follette and Dolliver submitted their figures on the cost of mercerization, the second great joke of the Cotton-Cloth Schedule was perpetrated. From the quarters in the Senate Office-Building occupied by scores of custom-house clerks, telegrams were sent wildly to many cotton-cloth manufacturers pleading for figures on the cost of mercerization. "Tell me what my bill means," was the appeal of Senator Aldrich. When the figures came in they were not different from those submitted by the "Progressives," and Senator Aldrich did not present them to the Senate.

Then Insurgent Senators attacked the "curtain clause." They drew the teeth of that "joker" by limiting the application of the 50 per cent. duty strictly to tapestry goods. Their hard fight also resulted in knocking out the "jokers" permitting a single thread to determine the color or mercerization of the goods. The other provisions for the counting of threads and the extra duty on mercerized cloth remained in the bill.

TREACHERY IN CONFERENCE

But Messrs. MacColl and Lippitt had declared that the color provision was "especially important." *This "joker" had been rejected in the Senate and in the House. But when the bill came back from the Conference Committee, it contained the "joker."* The conferees had violated the trust imposed in them by both the Senate and the House and had thwarted the will of Congress.

That little "joker" could not have secured enough votes in either House to make a respectable showing. After it had been placed back in the bill by the Conference Committee, the only way it could be eliminated was to defeat the whole measure, and Messrs. Lippitt and MacColl were able to report to their club members that they had successfully carried through their scheme to tax the people of the United States to

increase their own profits. Through their little "elucidation clauses," the schedules on cotton cloth were uniformly raised, in some cases several hundred per cent. over the old rate.

Messrs. Lippitt and MacColl had another reason for rejoicing. They had accomplished apparently even more than they had set out to do. A Customs Court was established. It was explained that ordinary judges do not know the fine points of tariff legislation and that a special court is needed to "elucidate" the law. Mr. Marion de Vries is now a member of that court. He will not in the future suffer the humiliation of having it recorded that his decisions are "irreconcilable." The Customs Court is the court of last appeal in tariff cases.

WHY 250,000 CHILDREN QUIT SCHOOL

THE YEARLY ARMY THAT DROPS OUT OF LINE – STANDARDS TOO HIGH AND TEACHING TOO DULL

BY

LUTHER H. GULICK, M.D.

(DIRECTOR, DEPARTMENT OF CHILD HYGIENE, RUSSELL SAGE FOUNDATION)

LAST June an army of 250,000 boys and girls, about fourteen and a half years old, marched from the city public-schools of America, proudly bearing the evidence of having completed successfully the eight years of study. During that month and the months preceding there dropped from the ranks another army of 250,000 children who had failed of graduation. They were of about equal age and had spent about the same length of time in school as their more fortunate schoolmates. The larger fraction of this 250,000 educational failures had completed only six of the eight years in the course of study.

This is our great educational problem. It transcends in importance all questions as to the method and scope, content or intent, for the first thing to do is to get the children to attend school.

The whole theory of democracy is built on the assumption that the voters shall be intelligent. The last two years of the elementary schools contain the studies basal to intelligent citizenship — United States history, civics, commercial geography, etc.

Our school systems have accomplished the first task given to them. They have in less than a century reached the point where all the pupils do actually get a working-knowledge of the fundamentals of an intelligent life, namely, the ability to read the daily papers, to write, to do such operations with figures as are involved in daily financial transactions. This has never been done before in the history of the world. Heretofore the bulk of the world got what education it secured in the home. In a single century the world has developed a social instrument which actually does this fundamental and world-changing thing — that is, puts the "three R's" into the possession of all.

We in the United States are making a new demand of our schools The pupils must learn the fundamental facts necessary

NOTE.— *Three years ago the Russell Sage Foundation commissioned Dr. Gulick and Mr. Leonard P. Ayres to collect the facts about children who quit school. Including data supplied by Superintendent Maxwell, of New York City, the records of 40,000 children in 250 cities were examined. The conclusions reached are set forth in this article.* —THE EDITORS.

to intelligent citizenship. Because of the decay of the apprenticeship system we may have to include vocational training in the schools; but, whether this is to come or not, it is necessary for all to become intelligent citizens.

The last two years of the course are by all odds the most valuable years. In a certain sense the first years are but preparatory to the last two years. During the first years the pupil has been mainly acquiring the tools of education. During the last two years he learns more about applying these tools than he does during the whole first six years. In such subjects as commercial geography he will light upon the activities of all our people. The study of how our country is governed — civics — is basal to intelligent citizenship. The study of United States history has been parenthetical and inadequate during the preceding years. During the last two years it is comprehensive and consecutive. This tragedy, therefore, of the bulk of the children who fail of graduation is that they succeed in accomplishing no more than the first six years of the course.

How, then, may we save this army of 250,000 children who drop out of school without completing the last two years of the course? I use the word "save" deliberately, for a large fraction of these 250,000 children drop out of school because they have failed. They are humiliated, their confidence in their own ability is destroyed, and the soul-destroying conviction is ground into them that they are "failures," "stupid," "dumb," or "backward."

My point of view is that of the non-technical business man who discovers that his factory is finishing up only 50 per cent. of its raw material. He wants to know what is the matter, and particularly how to stop this 50 per cent. of loss.

This article is written in the belief that there are at least four great underlying sources of loss which belong in varying degrees to all the schools in all parts of the country, both urban and rural, North, South, East, and West. It is true that the problem of the rural schools is different from the problem of the city schools, that the standards of the licensing of teachers varies greatly in the different states, that the general intelligence in different communities varies considerably, that the courses of study are widely variant, and that there are many other factors which render the problem complex.

Taking all this into account, however, there appear to be at least four great sources of loss:

(1) *Losses from the ranks, due to the lack of adjustment between the length of the compulsory education and the length of the school course.*

(2) *Losses due to preventable ill-health or to removable physical defects.*

(3) *Losses due to irregular school attendance.*

(4) *Losses due to the fact that the courses of study are either too difficult or not adapted to the average pupil. The school machinery is such that every facility is given children to go more slowly than the average, and but little opportunity to go faster than the average.*

I take these up seriatim:

SIX-YEAR LAWS WITH EIGHT-YEAR COURSES

In most of the states the law requires six years or less of school attendance, and yet the elementary course in most American states involves eight grades with a year apiece. So we have a six-year law with an eight-year school. In several states the law appears to require eight years, but in reality demands only six. For example, in Massachusetts the law requires the child to attend school from the age of eight to sixteen, but excuses him at fourteen if he has regular employment at home or elsewhere. The states demanding eight full years of schooling are Maine, Michigan, Minnesota, and Washington.

There are two factors basal to the length of the elementary school course. Upon these facts the duration of the compulsory education period should be established. These are (1) at what age is it best that a child should enter school? and (2) at what age should pupils graduate from the elementary school?

Under existing conditions it appears that, on the average, children who enter school at six or seven do better for themselves and the school than those who enter at any other age. We have long been told that children

who enter school at eight would be advanced enough mentally soon to catch up with, if not to pass, those who enter at six. The study of 40,000 children's records by my associate, Mr. Leonard P. Ayres, to whom I am indebted for all the data in these articles, does not support this claim. Children who enter at eight or nine do progress faster than those who enter at six or seven, but not enough faster to make up for their handicap. More children graduate who enter at six and seven than who enter at eight and nine. Under present conditions, then, children should begin school when they are six or seven years old.

Children should graduate at fourteen or fifteen. A change ought to and does come over children at that time which demands a less maternalistic environment than that of the elementary school. They are gripped by a new spirit of energy and independence which demands either the larger liberty of the high-school or the obligations of business. Even the best of children are restless and unsuited in the elementary school after fourteen. With a wonderful uniformity the average age of leaving school ranges from fourteen to fifteen all over the country. This is true whether they have graduated or not, whether they are native-born or foreign-born, white or black, whether the course of study is easy or hard, or even whether the teachers and teaching equipment are good or bad.

It is a great biological fact which we are dealing with. When the wings of the nestling are grown it leaves the nest. The same kind of force drives children out of the elementary school soon after they are fourteen. The elementary form of school is suited to children but not to adolescents. This is the first reason why children drop out of school at fourteen, no matter in what grade or part of the country they are.

The first thing that we need, then, is *a compulsory-attendance law, without "jokers" or exceptions, which shall require children to begin school at six or seven and stay in school for eight years.*

WHY CHILDREN LEAVE SCHOOL

Why do half of the children drop out of school before graduating? Sixteen per cent. of all who drop out do so because of ill-health; and those who have physical defects, such as poor hearing, poor seeing, hypertrophied tonsils, adenoids, or decayed teeth, progress through school 9 per cent. more slowly than children who are not so handicapped.

Suppose that a child is somewhat deaf and so does not learn enough of what is going on to do well. He fails and has to repeat the first grade. After it is discovered that he is deaf, a seat in the front row is always given him. He makes no more failures. He entered school at seven, at nine he entered the second grade, at ten the third, at eleven the fourth, at twelve the fifth, and at thirteen the sixth. There seems to be no question about the general truth of these figures. The chances are good that this boy will drop out of school. If he is followed by the school-officer it will be shown that the boy is already in his fourteenth year, and that he will drop out on his fourteenth birthday anyway without completing the year. The result is that he is out either then or on his fourteenth birthday. He reasons that he cannot hope to graduate, for that will take him till he is sixteen, so he had better drop out at once.

Medical inspection as already carried on in many places will detect all these cases before they have failed, and an efficient "follow-up" system will see that the defects are removed. It is wasteful to the state and inhuman to the child to have his progress in school blocked because he has some removable defect that prevents his seeing, hearing, breathing, or chewing. Children with bad teeth are, on an average, six months behind those in school with good teeth. Purely on the basis of economy, it is cheaper to have the teeth of these children filled than it is to pay for the extra six months' instruction or to have the children drop out of school with a year less of education than they otherwise would have had.

Now about the 16 per cent. who drop out because of ill-health. Adequate attention to a few simple matters will remove most of this.

(1) Medical inspection can stop the school's being a means of spreading measles, scarlet fever, and diphtheria.

(2) No matter what the system or lack of system of ventilation, every window in the building could be opened for three minutes

every period, or at most every hour. During this time the pupils should march around, sing, dance, and do exercises. Change of temperature is as important as purity of air, and moving around every little while is essential to good work. The method of opening the windows and taking exercise all at once avoids disturbing the balance of circulation in a pressure system of ventilation, and avoids the evil of noise.

(3) The building and pupils must be clean. Send the children home if they smell, and clean the building by the vacuum system. In most schools a cloud of dust rises about three feet from the floor when the children run or dance on it. No wonder that they have colds. The school-building could and should be as clean as a hospital, and for the same reasons. These three steps will largely prevent losses from illness.

Here are two largely preventable leaks in our school systems:

(1) *About 16 per cent. of those who drop out do so because of ill health.*

(2) *Those having removable physical defects make 9 per cent. slower progress than they should.*

TO STOP THE LEAKAGE

Another great leak in our school systems is due to intermittent attendance. The facts found by studying the records of all American cities which give in detail information about the regularity of attendance of their school-children, are the following:

Three children out of four attend school regularly, that is, more than three-fourths of the time. One child out of four attends school irregularly, that is, less than three-fourths of the school year. It is not to be expected that a child can master the work of a grade well enough to be promoted in less than three-fourths of the time.

London, England, and a good many American smaller cities have almost stopped this leak in the school system. It is accomplished by two steps efficiently taken:

(1) A school census which accurately locates every child of school age in the community.

(2) Adequately administered school laws, so that all who are not in school are immediately followed up.

There are at present many children who do not go to school simply because the city has no knowledge of their existence. They have never been registered in school. A child moves to another part of the city, takes his transfer slip, and it may be a month before he appears at the new school. Many children stay away from school for a month or so after school has begun; many drop out a week or two before the Christmas holidays and do not come back till a week or two after. Many, especially boys, drop out late in May or early in June.

Prompt following up of these cases in communities where it has been tried always results in establishing the habit of regular attendance the whole school year. Every child who is not keeping up because of intermittent attendance or any other cause tends to hold the entire class back and to absorb an undue proportion of the time of the teacher.

"HIGH STANDARDS" TOO HIGH

At present our courses of study are not fitted to the abilities of the average pupil, but to those of the unusually bright one. In an investigation in New York City it was found that for every child making rapid progress through the grades there were eight who made slow progress. Last year, in a Massachusetts city, for every one making rapid progress there were twenty-one making slow progress. In a large city in Pennsylvania the slow pupils are fourteen times as numerous as the rapid ones. In five other cities in different parts of the country the slow pupils are from ten to one hundred and fifty times as numerous as the rapid ones. The condition is general if not universal. It is probably a most conservative statement to say that in the average city there are at least ten times as many children making slow progress as there are making rapid progress.

I know that the difficulty in making up a grade once lost lies not mainly in the course of study but in our lack of school machinery adapted to help the pupil to regain a lost grade or to gain a grade. But the large number who lose grades shows that the course of study or the promotion conditions must be changed. The essential and the only essential condition for promotion should be the attainment of such knowledge and skill as will permit of the next grade being understood. This involves in most years

only a fraction of the whole work covered. Arithmetic is almost the only subject that is so consecutive that one year's work absolutely depends on that of the previous year. And even here the essentials are addition, subtraction, multiplication, division, fractions, and percentage. It is less expensive and more humane to give special help to a child that he may be promoted than it is to degrade him with all the loss to the individual, the school, and the community which is involved.

The objection raised is that this means lowering the standards. A high standard is one which secures the best and most effective and successful work from the pupil. Those standards are vicious and low which promote failure and discouragement. I know one teacher who for years has "failed" over half of each successive class by so-called "high standards." That woman is responsible for the termination of the school-career of hundreds of boys and girls who average up well both in effort and mental power. The trouble is with the standard. A man teaching boys to jump, who should put the stick at such a height that a considerable number failed and stopped trying, would not be regarded as maintaining high standards. It is his business to teach boys to jump — not to discourage them so that they will leave the field.

This army of failure, consisting of the 250,000 children who each year leave our city schools, having failed of graduation, may be largely recruited into the army of success, those who graduate, by four measures:

(1) Having a genuine eight-year compulsory school law for the eight-year school.

(2) Having medical inspection of schoolchildren with adequate "follow-up" work by school nurses or teachers. This brings the rate of progress of the children having defects up to the normal. Adequate hygienic supervision of the school and its work largely does away with the 16 per cent. of those who drop out because of ill health.

(3) A complete school census and an adequate administration of attendance-officers cut down all failures due to the fact that 25 per cent. of the children now attend school but three-quarters of the time.

(4) The course of study and school machinery must be so adapted to the average that as many will go faster as go slower than the mass.

In a school system with 1,000 pupils entering each year and 83 per cent. promoted each year, there will be 830 who complete the first grade in one year; of this number, 689 will go through the second grade in one year, 572 the third, 475 the fourth, 393 the fifth, 326 the sixth, 271 the seventh, and 225 will graduate without having failed. A few will go faster than this, and about 250 will keep on in spite of one or more years of failure, so that eventually about 500 will be graduated each year. These are the present conditions in American city schools. In those systems that have changed these promotion rates to 95 per cent. or better, the figures are as follows:

950 complete the first year without failure.
903 complete the second year without failure.
858 complete the third year without failure.
815 complete the fourth year without failure.
774 complete the fifth year without failure.
735 complete the sixth year without failure.
698 complete the seventh year without failure.
663 complete the course without failure.

And it would be reasonable to expect that those who continue in spite of having failed only once in their course will nevertheless graduate. This will give a total of 941 — that is, 94 per cent.

These four measures do not increase the total expenditure for instruction in any respect. They decrease, not increase, the number of children in school at any one time, for children are promoted and graduated promptly. They give 94 per cent. of the children the important studies in the two upper years of the course, while at present only one-half of the children get these studies.

These measures stop the "blocking" in the lower grades, raise the health and efficiency standards of the whole body of pupils and teachers, and tend to establish the habit of success rather than the habit of failure in the pupils. This is of greater importance than anything in the course of study. It sends the children out into the world with hope rather than with discouragement.

The accomplishment of this result, the conversion of the army of failure into an addition to the army of success, is the second great achievement of the American city schools.

TALKS WITH A GREAT TEACHER

INTIMATE HOURS WITH THE LATE PROFESSOR WILLIAM GRAHAM SUMNER, OF YALE

BY

J. PEASE NORTON

(PROFESSOR OF ECONOMICS IN YALE UNIVERSITY)

IT HAPPENED after I had read many books and listened to the lectures of many teachers who had disappointed me in the breadth of their prejudices and in the confusion of their issues, that I came across William Graham Sumner. I heard him once and knew that I had found a great philosopher. Forthwith I dropped much work of other men and spent in three years four hundred hours in his classrooms and many hours in conversation with him at his house. He was the most honest man whom I have ever met. His understanding of the great questions of this world was the wisest which it has been my lot to follow. In all his teachings and conversation I never found the slightest trace of an influence which would discolor his presentation of the knowledge which he believed to be the truth. Because he loved truth and hunted knowledge with wisdom, he was the Socrates to whom men listened with respect.

Many times I have met him alone, both at his classroom and at his house, in the hour before he was accustomed to begin his evening reading, and I have asked him, as the twilight deepened, how he thought upon great questions.

I asked him to tell me what he thought *now;* for I saw that here was a man who had read — with honest search for truth for fifty years — almost everything written regarding man's place in nature; and the final fruits of all this thinking I was eager to achieve. Therefore, on each occasion, I brought up a new problem, and he told me what he thought. Sometimes he talked on such subjects as Christ, Buddha, the Catholic Church, the life beyond; and at other times he discussed marriage, universities, democracies, republics, graft, and men. Most interesting was his estimate of great men, both living and dead.

"Who," I once asked, "are the three greatest men of to-day?" His reply was something like this: "If you wish me to select them according to their power for good for the next generation, I should say Rockefeller, Edison, and Carnegie. Their power for good depends upon the vast resources which these men control. Rockefeller and Carnegie are able to *initiate* vast institutions which by a slow process of evolution would require centuries to develop. Edison represents the productive capacity of the human brain pitted against the secrets of the universe. He has produced, by invention, wealth greater than we can hope to measure.

"Next to him, Rockefeller has produced, by an inventive genius directed in the human field rather than against nature, incalculable wealth by controlling men, perfecting organization, and eliminating waste, which is the sole direction of progress. Carnegie is in a measure the accident of a combination of aggressive acquisitiveness, tariff privilege, and a rich environment. But Edison has created wealth by invention just as Rockefeller has created wealth by method. Society should strive to make thousands of Edisons possible. Who knows how many Edisons have not developed because the opportunities to produce have not occurred? Rockefeller has perfected the method of fitting together little Edisons with some of the qualifications missing; and by supplementing the qualifications needed

by coöperation with others, he has in this way hitched up corporations which should be models of efficiency for our own government and for governments of the world."

Again I asked him: "What is the future of the Republic?" His reply was to this effect:

"That is a question on which I have speculated many hours. As a nation we are now entering the glory period. The swash-buckling Roosevelt appeals to the crowd. He can do a vast amount of mischief because he will make the people like that type, and those who imitate him will not be so honest in their intentions as he is. I don't like to see the glory period, because it brings in grave dangers of corruption and extravagance which ultimately have ruined all the republics of the past. I don't believe the Republic will last longer than 1950. We are on the threshold of very great wars, and the possibilities of trouble in the East are tremendous."

His philosophy of political events was keen and illuminating. It was something like this: "You must distinguish sharply in history between the motives and the consequences. The motives may be good and the consequences may be bad. On the other hand, the consequences may be good when the motives are bad. Distinguish clearly, if you would understand events, the real purposes, the alleged motives, and the slogan. They are often separate and distinct. Remember that these have nothing to do, necessarily, with the consequences. The consequences are the products of the immediate conditions, and the power suddenly given to those who promote a new movement successfully and go into office reacts upon their characters in turn, so that everybody is often disappointed in the result.

"Take Socialism. It commences very radically. As it becomes popular, the radicalism is modified by the addition of the more conservative to the ranks. Such a movement travels under a slogan — 'Equality and fraternity,' 'Life, liberty, and the pursuit of happiness,' 'Equal rights' — grand maxims which orators take down from the shelves and dust on the Fourth of July. These grand, impossible slogans offer hope. Thousands repeat the words. Back of the slogan march the true reformers and the politicians. The purpose of the politician is to get an office. The few sincere reformers are trying to do good to the world. The politician uses the reformers to get his popular support. As the procession marches toward success with banners flying, the reformers rapidly become the small minority, and the camp followers are a motley crew.

"So it goes, over and over again. In the end, everybody is disappointed, because society goes on just the same as before. There is only a little more than enough to eat for most of us, and there always have been some people left out in the cold without shelter in winter. Take Roosevelt's doctrine of race suicide. If we were to take him seriously, where would we be? Society has had to limit offspring, sometimes very ruthlessly by infanticide. The effect of the institution of monogamy is in this direction. When the pressure of population is slight, polygamy flourishes. There, Roosevelt's doctrine is approved by the accepted *mores*. Norton, we have all got to mind our own business, and in doing this, see to it that the other fellow minds his and that the Government maintains justice.

"Roosevelt has the right idea in the 'square deal.' I never believed in Socialism or paternalism. The only comfortable place in a socialistic society would be a place on the national committee. Good men who try sincerely to run other folk's business do a vast amount of mischief. Do not imagine that a popular doctrine is necessarily true. In the end, the truth is apt to prevail. There will always be men who will defend the popular doctrine.

"I have seen a few economists defend 'protectionism' on principle, but I have never found that anybody took them very seriously, and I know that I never thought much of their principles. The effect of high duties is to drive the people from their farms into the cities. This raises the cost of living, and finally a reaction starts. The cry then is, as in England for the repeal of the corn-laws: 'Give us cheap bread.' In a few years, you will live to see the breakdown of the mischievous protectionistic system."

In his philosophy of good and evil in the state, he distinguished between those who produce wealth and those who destroy it. His thought was that the genuine producers of wealth by invention, method, and labor should be free from all unnecessary interference, because such production is the life-blood of social prosperity.

I asked him once what he considered was most worth striving for in this world. His answer was immediate: "The happiness of little children, who are the promise of great happiness for all. The child cements the marriage and, afterward, the interests of husband and wife run parallel in the career of the child. The feeling against divorce arises from the injustice done to the child. Once in many, many thousands, there occurs in real life a case of the ideal marriage which does not require the children to make it lasting. It is the ideal; in it we see the highest transport of the human imagination in beauty and fidelity, so that all evils undergone are as nothing, and life and death become as little things.

"The great romances of history which cut across the very links of fate belong to the above ideal, and they often end in pitiless, although beautiful, tragedies. For society is adjusted not to the ideal, but to average conditions; and more often in real life than in novels we see the contradiction to the ideal, which we would see in the current literature if any novelist dared to let the beautiful bride at the end of one marriage become the horrid mother-in-law in the next."

Had political conditions been different, Professor Sumner might have been Minister to England or a Secretary of the Treasury. In either place, his work would have commanded the attention of the nation. With his death, Yale has lost her most distinguished teacher, and America a very great, if not her greatest, philosopher, whose specialty was man.

A CITY THAT TAXES THINGS AS THEY ARE

EDMONTON, CANADA, PUTS NO TAX ON IMPROVEMENTS, AND ASSESSES ITS BUSINESS TAX ACCORDING TO THE SQUARE FEET OF FLOOR SPACE — A SYSTEM THAT WORKS

BY

FRED BATES JOHNSON

HERE on the main business street lies an unimproved lot with a fifty-foot front; its value at, say, $1,000 a front foot, is $50,000. Next to it lies a lot of the same size, with the same land-value, but improved with a $50,000 building. Now on the ordinary basis for valuation for taxes, the second lot, with the $50,000 improvement, would be taxed twice as much as the first. But ordinary conditions do not prevail in this city. The unimproved lot is taxed exactly the same as the improved lot; each is taxed on the basis of the valuation of the land itself.

The city is Edmonton, capital of the province of Alberta, Canada — located one thousand miles west and north of Winnipeg.

Edmonton is old as a settlement, but young as a city. Its history runs back more than two hundred years into the old Hudson Bay Company times. Its development into the city class has been rather recent, however, and only during the last four years have these new theories been tried.

In the first place it offers a novel scheme of taxation. Taxes are levied on only four forms of value — (1) Land, (2) Business, (3) Income, and (4) Special Franchises. Aside from the poll-tax and the taxes against property-owners for improvements local to their property, the four schedules constitute the basis of the city-assessment roll. As a matter of fact, only three are used, because all of the special franchises are owned by the city, and hence not taxed.

When the assessor goes around in the spring, he considers three factors in making up his assessment-roll or tax-duplicate — the value of the land, the value of the businesses, and the value of the incomes. The income-tax is simple. The first $1,000 of the income is exempt. Each additional thousand dollars of income is taxed at the general tax-rate — $1.45 on the $100 in 1908, above the exempted thousand.

The actual cash-value of the land is taken, and the tax-rate applied to it by the assessing officer. "In estimating the land value," says the city charter, "regard shall be had to its situation and the purpose for which it is used; or, if sold by the present owner, the purpose for which it could and probably would be used in the next succeeding twelve months." In other words, if there is a livery stable next door, this vacant lot will be assessed with respect to its value as a site for a livery stable; if the building happens to be a residence worth $25,000, the assessment will be on the basis of its value for a residence worth $25,000. If there be a bank next door, this lot will be assessed on its value as a possible bank-site. Not that these examples state exactly the real situation. The property next adjoining, standing by itself, does not of itself determine this basis. All the property near-by — the immediate neighborhood — is taken into consideration.

The tax on business is perhaps unique. The assessor fixes a rate per square-foot of floor-space (irrespective of partitions, elevators, stairways, or other obstructions) of each building or part of building used for business purposes. Then he fixes a different value per square-foot for each business, ranging from twenty-five cents a square-foot for the florist to $7.50 a square-foot for the banker. To illustrate: A florist occupies a single-story building 50 feet wide by 200 feet long, a floor-space of 10,000 square-feet. The valuation of his business, assessed on the basis of twenty-five cents a square-foot, is $2,500. The bank, down in the city, occupies the same amount of floor-space as the florist, but its business is assessed at the rate of $7.50 a square-foot, so that its valuation is placed at $75,000. At the 1908 tax-rate the florist pays $36.25 and the banker pays $1,087.50.

Nor does the character of the building enter into this business tax. The florist, in a generous mood, may have made his greenery of silver and plate-glass, costing $100,000; and the banker, in a fit of acute penuriousness, may have built his bank of poplar logs or peat, at a total cost of $200. The assessments will stand, anyhow, as figured out on the basis of floor-space, for they are not assessments on the shell which holds the business. They are occupation, not improvement taxes.

The basis for every business is fixed each tax-year. About fifty definite businesses are enumerated and in addition there is a catch-all for the unclassified businesses. During the year 1909 each square-foot of a millinery store was assessed for $2. The undertakers were assessed on the basis of $2.50 a square-foot; the ice-cream parlor, $2; piano store, $3; boarding-house, fifty cents; hotel, $1; drug-store, $4; and printing office, $2.50.

Then, too, distinctions are made in the same line. In dry goods, for example, each square-foot of a retail store is assessed at a valuation of $3.50, whereas that of a wholesale store is valued at $2. The first floor of a furniture store is assessed $1.50 a square-foot, the second floor $1, and the floor which contains the carpets and linoleums $3.50. The wholesale grocer pays $1.50 and the retailer $3.

Now take the provision for the professional man. His profession is not taxed as such. The tax is placed on this same basis of floor-space, the lawyer, for example, being assessed on a valuation of $4 a square foot. The young chap just starting up pays a small tax on a small space; the older practitioner, with his library rooms, reception rooms, consulting rooms, pays a large tax. So, too, with the doctor and the dentist. It is interesting as a living system anyhow.

Of course, these valuations also differ from year to year. This means that there is a large discretionary power lodged somewhere. It is a delicate job for one man. The assessing officer and his assistants are appointed by the city council, to serve during good behavior. No questions of local or Dominion politics enter into it. Perhaps that is the salvation of the scheme.

In cases of alleged unfair valuation, there is an appeal to the council, and from the council to the local judge. But during the year 1908 there were less than half a dozen appeals from the assessor to the council, and only one to the court. Somehow the plan seems to satisfy the harshest of tests: it works.

"This tax on land," said Mr. A. G. Harrison, secretary of the local Board of Trade, "discourages the buying and holding of unimproved land for speculative purposes. On the other hand, there is every inducement to improve, and to improve well, for a very valuable improvement pays no more taxes than one of nominal value — neither pays any.

"This premium on improvement and penalty for non-improvement has forced our city into compactness, so far as buildings are concerned. The city is built out evenly and regularly. So, too, the form of tax on business makes for compactness. Our florist is not going to use more space than he needs, nor is our lawyer. Each pays on a space basis; and, in renting property, each gets just what he wants and not twice as much."

Other features of this city government are not less interesting. Suffrage is based on a property qualification. All men, unmarried women, and widows of the full age of twenty-one years who are assessed on the last revised assessment-roll for $200 or upward make up the voting-list. But if some man with no property of his own was forehanded in his choice of a wife, and obtained (or was obtained by) a woman who has property to the value of $200, this shrinking male may vote — provided he gets, in writing, the consent of his wife.

Nor is this all. In matters involving the issuance of bonds for permanent improvements, there is another list of votes to be considered — the "burgesses." These burgesses are impersonal voters — banks or other corporations — and there you have the property qualification again. A burgess consists of "any bank or other corporation assessed on the last revised assessment-roll as a freeholder or lessee of real property, which, if held or leased by an individual, would entitle him to vote"; "it shall be entitled to one vote only, which may be given by the chief resident officer of such corporation." In certain cases, too, all voters may cast more than one vote — they may vote in all the wards in which they hold property, and in each ward may cast several votes, according to a sliding scale. A voter with property between $200 and $2,000 in value has one vote; between $2,000 and $5,000, two votes; $5,000 to $8,000, three votes; $8,000 and upward, four votes. This cumulative voting, however, applies only in certain money-raising matters which, originating in the city council, have to be referred to the voters before being finally passed — a sort of referendum.

This charter — this coat of Joseph and its patches of Henry George, English civic schemes, Galveston adaptions, patches of all shades, shapes, sizes, colors, descriptions and imaginations — whence came it? In brief, it came out of the head of one William Short, King's Councillor, several times mayor and now the leading citizen of Edmonton.

"I got my ideas from the peculiar needs of our city," said Mr. Short recently. "I did not know who Henry George was and the term 'single-tax' was at that time outside my vocabulary. Out here was our city, growing up by itself, a thousand miles from Winnipeg, isolated in our far western position. We seemed to belong to no one in particular, and no one would assume the responsibility for us. We assumed it ourselves, and worked out our problems the best way we could. We were off from the world, in a way, and had the right to try our experiments in our own city if we wanted to. We did want to — and are trying. So far we think we have been successful."

"And if the plan doesn't prove itself after some years?" he was asked.

"In that case we shall try another," he smiled in reply. "And another, and another, and another, again and again," he might have added. For that is the way this type works — the pioneer type of the city.

SIX HUNDRED MILES IN A HOUSEBOAT

A LEISURELY CRUISE ALONG THE COAST OF BRITISH COLUMBIA IN THE FIRST MODERN HOUSEBOAT IN PACIFIC WATERS

BY

JOSEPH GILPIN PYLE AND ANNIE SANBORN PYLE

IF THE gasoline engine has made aviation practicable, its transformation of the houseboat is scarcely less startling. Until recently the word "houseboat" suggested a cottage of from two to four tiny rooms, set on a scow, that might be anchored by a river's bank or in some cove of the seashore protected from winds and waves. Its highest ambition was to float down or be towed up a stream in a favorable interval of the seasons. It was not much of a house, and still less of a boat.

The houseboat of to-day and to-morrow differs from this as the motor-cycle differs from the old single-wheel velocipede, or the automobile from the ox-cart.

For from one-fourth to one-tenth of the cost of an ocean-going yacht, a man may to-day build a houseboat giving equal comfort, from one-half to two-thirds the speed, and quarters far more homelike and adaptable to living purposes. He can operate it for a small fraction of the cost. He may and should, at the same time, if he knows what he is doing, build his houseboat so that she will be absolutely seaworthy for any voyage short of an ocean passage. The new houseboat is suited to all our domestic waters; and may be fitted, if one so desire, for trips as venturesome as that to Honolulu from our Pacific, or that to the Bahamas from our Atlantic Coast.

In round figures, the *Lotus* is 92 feet long, 18 feet beam, and has an extreme draft of 6 feet. The feature of her construction is the union of the yacht outline below the water with the houseboat line above. The former gives stability, safety, and speed; the latter, roominess and opportunity for collective comforts unknown elsewhere outside the home. The hull is so strong, so well braced, and so furnished with ample bulkheads, as to be secure against any catastrophe short of complete destruction.

The *Lotus* unites the elegance of the private yacht with the roominess of the houseboat. Her saloon is eighteen feet square, with open fireplace and beautifully paneled finish. Her staterooms are in white enamel, large enough for two single beds, a good closet, and a dressing table. Hot and cold water are on tap in each room. Two bathrooms complete an equipment equal to that of a commodious house, with kitchen and pantry and crew's quarters aft. The hold will carry provisions for as many months as may be desired, the refrigerating room accommodates a ton of ice, and the fresh-water tank holds 1,200 gallons.

Forward on the upper deck is the wheelhouse and chart-room, glass-walled, a social as well as a navigating centre. Aft are carried a canoe, a yawl, a double-ender, and a motor tender of 20-horse power for excursions through rocky passages and into shallow waters. The remainder of the upper deck, the whole of which is covered by a light roof, is furnished with easy chairs and is a favorite resort for any hour of the day or night.

The mechanical equipment of the boat is simple and complete. She is driven by a gasoline engine of 80 horse-power, giving a speed of from nine to ten miles per hour, which shows little variation except against strong head-tides. Separate engines operate the dynamos and charge the storage batteries by which the boat is lighted throughout, the anchor raised, the salt-

water tanks kept filled and the tender lifted on board. The gasoline tanks carry fuel for a cruise of 2,000 miles.

The crew of the *Lotus*, with which she covered several thousand miles during the past summer without a mishap or a serious inconvenience, consists of four persons. An engineer to look after the machinery; a sailor to clean up, work the ship when the skipper is off duty, and man the small boats; and a Japanese cook, with his wife as housemaid and steward, constitute the full complement of help.

The *Lotus* was built under the owner's eye, largely from plans evolved by his own experience and original ideas suggested by years of study and life upon the water. Launched in the spring of 1909, the usual delays in finishing prevented a trial trip for shaking down and smoothing out her machinery before her departure on the christening trip. So, practically still an experiment, she left Seattle with a full complement of ten passengers on her maiden voyage on July 10, 1909, to brave the rough waters of the Straits of Fuca, the Gulf of Georgia, and the British Columbian coast.

The length of this first cruise is eloquent of houseboat possibilities. For nearly a month the party enjoyed an ideal summer life. The *Lotus* dropped anchor every night in some lovely bay — although she could as easily have gone ahead with the aid of her searchlight — because this was a pleasure trip and hurry was taboo. So also we preferred to take toll of the country, in fish and game, although the cold-room and the ship's stores were equal to an ocean crossing. The only need of interrupting the voyage by a landing anywhere came when the fresh-water tanks ran low after from ten days to two weeks of constant draft upon them. Of course, had it been necessary, the supply could have been husbanded without discomfort so as to last much longer.

So we fared, steering confidently by chart and compass through these waters whose minute and accurate charting and careful buoying shame our own, taking a rough sea or a head-wind or bucking an adverse tide with steady ease; lying by in wild weather, not from apprehension, but because there was no need to invite hardship and no hurry to get anywhere. Deer fell to the gun and fish to the rod. We hunted on uninhabited islands, where a tramp of two or three miles through the woods was an exhausting morning's work, repaid by the easily found trophy of noble game. We fished in land-locked bays and in outer waters where whitecaps were rolling, and found the silver salmon eager for the spoon. Trout up to the seven-pound limit, including the rare Powell River variety, with heads and backs like lampblack from the shadow of the great log jam under which they have bred for years and the color glowing through their smoky sides like the light of a sullen conflagration, were everywhere ours for the taking.

But we came back, wet and dirty and hungry from a day's exhausting work of stalking deer or whipping a stream through unbroken wilds, not to the few slack comforts of the campfire and the tent, but to a delicious bath, fresh clothing, and a dinner such as neither the home nor the club could surpass. Then followed the glorious evening on the upper deck, with pipe and cigar, with song and story, and deep, restful sleep in roomy beds to the soft accompaniment of waves that, in our cosy anchorages, lapped the sides of the *Lotus* and lifted her just enough for a lullaby.

There is, perhaps, no other part of this country so well fitted for such an outing, by its combination of wildness with nearness to men's haunts and large cities, as the coast of British Columbia. There is cruising ground enough for months of daily sailing without revisiting a spot once seen. The Columbian coast is a constant reminder of that of Norway. You are gliding up one of the silver straits that open to the north when, on the right, a narrow entrance seems to promise adventure. A glance at the chart shows it to be the mouth of an inlet that runs up into the land for seventy-five miles. Ascending it, the only difficulty is to find anchorage. A cove or two may give the desired ten or fifteen fathoms, but oftener even the rare bays show from forty to one hundred; and the persistent voyager will throw out his anchor upon a few feet of shoal and sleep lightly enough to start the engine quickly if a sudden night wind should chance to blow on-shore.

Broken only by an occasional logging camp or Indian village, or the cabin of a prospector, the wilderness runs on and on. The scenery up these fiords is magnificent. Mountain after mountain shoulders its way into view as the channel winds among them. There is infinite variety. Here one runs by the familiar green cone—pines covering it straight to the summit; then comes a rugged giant, lifting a scarred head to the sky; beyond shows the sheer white of the snow-covered peak against a cloudless blue. Glaciers peer down from clefts five thousand feet above. Waterfalls throw themselves headlong everywhere. Here you may tramp up a narrow valley on an easy trail, grouse and wood-pigeon rising startled at every few steps and the stream calling to you incessantly, lunch in a sunny glade, and bask in the intense sunlight of the northern summer. Without lifting anchor you may turn to the other side, row over to where you can lay your hand from your place in the boat upon the side of a cliff that rises as straight as masonry five thousand feet from the water, and feel upon your cheek in the gloom of its shadow the cold breath of valleys of eternal snow.

When you have explored one inlet, Jervis for instance, and returned to the point where you entered it, or perhaps chosen another route out — for in places the maze of channels is as intricate as among the bayous of the lower Mississippi — you have but to sail northward again a few miles to run past another entrance. Up there lies waiting for you Bute Inlet, another seventy-five miles or more of fiord, similar but so different in contour and setting and color that there is no danger of surfeit. And so the days slip into weeks, and you feel that you have been in the wilderness for a lifetime and explored half a continent.

You wonder if you are not nearly through this vast watery labyrinth, and fancy that you must see the smoke of Juneau around the next turning. You glance at the chart and discover that you have progressed a few inches across its surface; the whole of which would scarcely carry you as high as the latitude of Vancouver Island's northernmost tip. Then you begin to realize the immensity of these northern spaces and their special adaptation to this form of recreation. For a fleet of all the pleasure craft the country could furnish would scatter into lonely and isolated units if distributed evenly over these endless miles of water; and not for many a year to come can the steady invasion of occupation and development make a serious impression upon these leagues on leagues of mountain and forest, these unexhausted coverts and streams unvisited.

The beginning of the *Lotus's* voyage was almost pastoral. A few hours' run from Seattle brought us to Whidbey Island — long, low, fruitful, idyllic as a bit of land cut out from surroundings occupied for centuries. Next morning we were breasting the tide through Deception Pass, three miles long and half a mile wide, where a ten-minute failure to make the schedule worked out from the tide tables would have meant a wait of hours. Deception Pass is crooked and narrow. Dodd Narrows, a little farther on, are sixty-five yards wide at the narrowest point, and the spring tides rise fourteen feet. The waters of hundreds of square miles in area must discharge, with such alternations of level, through these rocky raceways at every turn of the tide. It rushes through at high and low water with a speed of from six to eight knots per hour, swirling and dashing about the encompassing rocks. The wise navigator bides his time. We were a few minutes late, and the vigorous engines of the *Lotus* had their work cut out for them even though the tide had only just turned. At times one could be certain in which direction the boat was moving only by taking sight through the window at some object on shore; while the lift of the current and the bite of the screw combined to bring the surface of the boiling water at the stern just level with the main deck. It is part of the delight of cruising in these waters that the navigator has many such problems to work out for himself; many a close connection to make; many a channel and bay through which to feel his way cautiously; many a trick of tide or hint of wind and wave to store away for future reference.

Beyond Deception Pass lie the San Juan Islands, one of the most beautiful and least-known possessions of the United States.

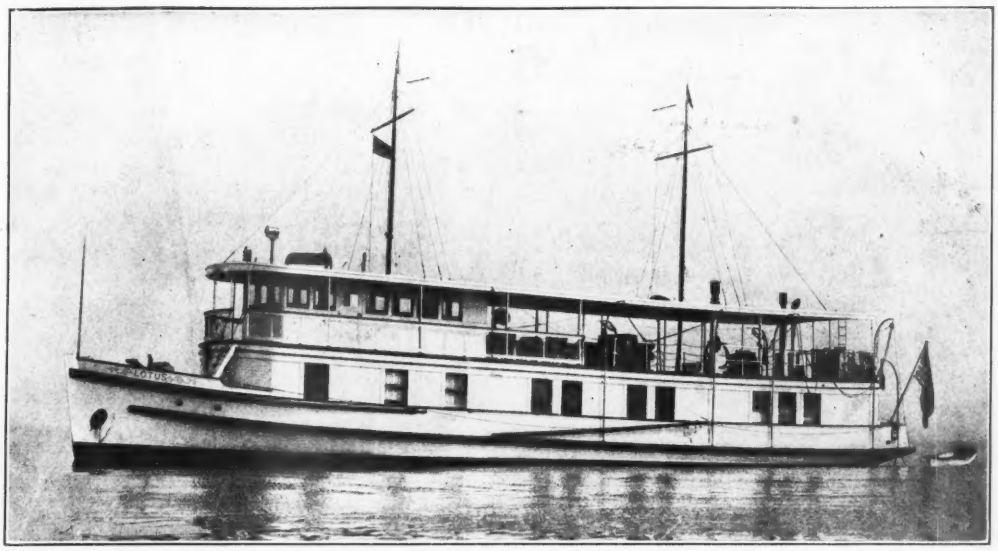
Probably a hundred people know about Porto Rico for one who ever heard of the San Juan group. Yet their possession was one of the points about which gravitated the issue of peace or war with Great Britain until the boundary line was finally adjusted less than forty years ago. They are among the most fertile, picturesque, and wholly delightful spots over which the flag floats. They constitute an entire county of the state of Washington. They are broken by hills attaining in places the real mountain dignity; fissured and torn

"We fished in land-locked bays and in outer waters where whitecaps were rolling, and found the silver salmon eager for the spoon"

into long peninsulas by arms of the sea; only scantily populated or cultivated as yet. They grow delicious fruit in abundance, have a heavenly climate, and are within a few hours' run of three large cities and important markets — Seattle, Victoria, and Vancouver.

On one of these islands Mr. Robert Moran, who built the battleship *Nebraska* for the United States Government in his yards at Seattle, has retired to the state of a baron of the Middle Ages. Mr. Moran's health broke down under the strain of such achievement as only our country and our time have ever attempted, and the physicians passed sentence of banishment upon him. Forthwith he sold his shipyard for some millions, bought several thousand acres on Orcas Island, utilized the water power from two lakes lying from three to twelve hundred feet up in the hills, re-established his beloved shops as a pastime instead of a business, and built himself there in the solitudes a castle that is a marvel. With vaults and foundations excavated deep into the solid rock, floors of inlaid teak throughout, doors and furnishings of Honduras mahogany, windows of half-inch plate set in frames of solid brass, every ornament and luxury that desire can suggest, including a pipe-organ larger than most cities except those of the first class can show, and with every particle of the work done on the premises — this extraordinary palace in the wilderness is as unique as the tireless energy and creative stress of the remarkable man who built it and lives in it the year round.

There are good cruising and good sport for a summer among the San Juans alone. But the North is a magnet for sportsmen as well as a compass. Up there lies Nanaimo, the last outpost of cities; and beyond are the tumultuous Straits of Georgia and the Island of Texada, picturesque as its name, crammed with mineral wealth as yet little exploited, and so prolific of game that it would be as good as a private preserve were not the game laws of the province severe in terms and rigorously enforced. Here the scenery begins to doff its garb of quiet loveliness and to assume a certain severity of grandeur. Up Agamemnon Channel and through Jervis Inlet one approaches Vancouver Bay by a water court worthy of the great explorer whose name it bears. On either side, by some trick of perspective, the rock walls are as straight and true as if laid by the plumb line. Between them is a runway of dark water that grows dimmer and dimmer until it fades into total blackness. Sheer cliff bars the exit, too distant and too dark to distinguish from night itself. And as the venturesome craft enters this morose and gigantic waterway, it is as if the voyage could end nowhere short of some infernal region in the bowels of the earth.



"The houseboat has arrived. It is the supremely fit instrument for ends of pleasure and outing and sport and all those impulses that help to keep alive and sustain in us the wholesome instinct of happy savagery"

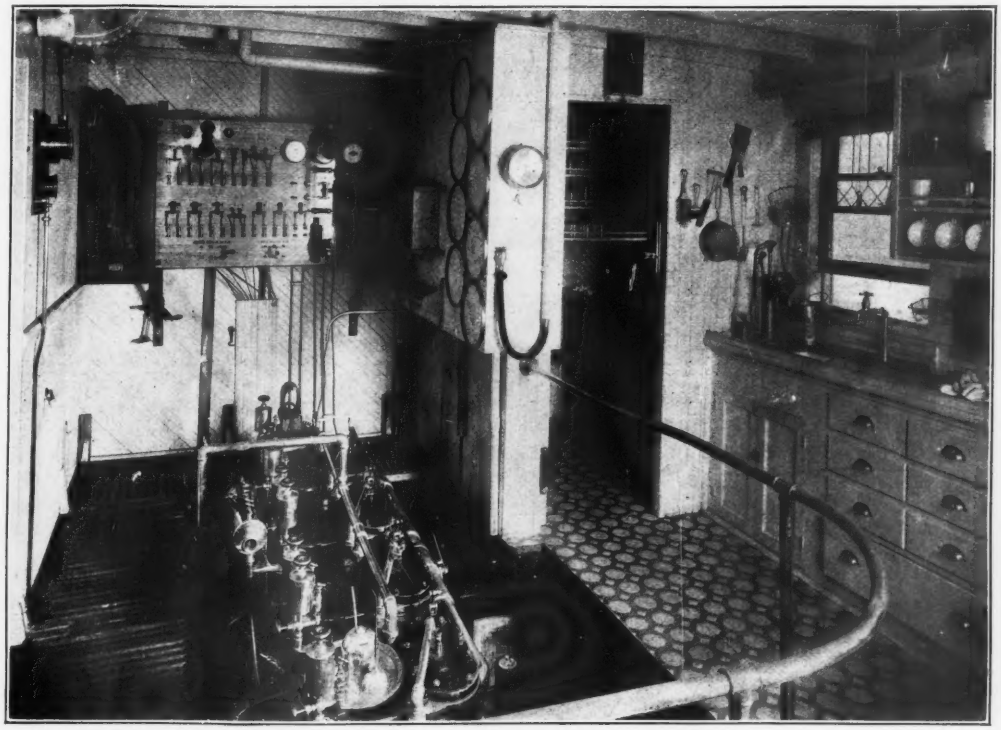
On Queen's Reach, above Vancouver Bay, Mount Oliver rises to the height of 8,450 feet. In Princess Louise Inlet, about five miles long and three-quarters of a mile wide, are crowded all the wonders of wildness and solitude. Thousands of feet high on every side the mountains stand. Of life there is nowhere any sign, save as the bald eagles wheel among the cliffs and the shining heads of seal emerge from the water. Thirty waterfalls we counted sending their white streamers down the mountain sides. At the head of the inlet the largest of these, a mighty cascade, roars into the sea after pouring for four thousand feet in a succession

"And so the days slip into weeks, and you feel that you have been in the wilderness for a lifetime and explored half a continent"

"The *Lotus* unites the elegance of the private yacht with the roominess of the houseboat. Her saloon is eighteen feet square, with open fireplace and beautifully paneled finish"

"Forward on the upper deck is the wheelhouse and chart-room, glass-walled, a social as well as a navigating centre"

"Deep, restful sleep in roomy beds, to the soft accompaniment of waves that, in our cosy anchorages, lapped the sides of the *Lotus* and lifted her just enough for a lullaby"



The engine-room is as tidy as the pantry, and the refrigerating-room in the hold accommodates a ton of ice

of waterfalls from the foot of the glacier that gives it birth.

Through such waters and such wonders the *Lotus* sailed in leisurely fashion on her christening trip of more than six hundred miles. We declined to hasten or to fix a course. Each night plans were broached and somebody said: "Where shall we go to-morrow?" It made no difference, because nobody wanted to get anywhere in particular. So chance and curiosity and the lure of the country's beauty were our guides. We saw the mists rise on wild shores, and sailed through schools of sportive whales, and visited Indian villages where every living thing except a few geese had gone to the salmon fishing, and everything except a few old totems was locked in the ancient houses of assembly that could tell some queer tales an' they would; and we watched one vista of silver and green and gold succeed another over the shining sea, and were exceeding glad that we were alive and faring with the *Lotus* through the wilderness.

The moral of this tale, like all good morals, was told at the beginning. The houseboat has arrived. It is the supremely fit instrument for ends of pleasure and outing and sport and all those impulses that help to keep alive and sustain in us the wholesome instinct of happy savagery. It can be made as comfortable as your own home. It can be made indifferent to any seas or weather likely to be encountered in alongshore journeys. It can carry power enough to be independent of obstacles and stopping-places. It can be varied infinitely, in plan, in fitting and furnishing, in operation, to suit any taste and almost any purse. It is the ideal craft for all who love the ripple of the river or the briny smell of ocean, together with that touch of wildness that seems to enter into and strengthen the very stuff and content of the soul.

"In Princess Louise Inlet, about five miles long and three-quarters of a mile wide, are crowded all the wonders of wildness and solitude. Of life there is nowhere any sign, save as the bald eagles wheel among the cliffs and the shining heads of seal emerge from the water. Thirty waterfalls we counted sending their white streamers down the mountain-sides"

The houseboat is no longer the refuge of the water tramp or the plaything of the eccentric. It has taken its place in the scheme of things for a people whom the growing habit of outdoor life and summer vacation is gradually rescuing from the doom of overwork and nervous exhaustion. The christening of the *Lotus*, not a prophecy but a fulfilment, may thus become something more memorable than a pleasure cruise; a real epoch-making event in a larger world than she ever dreamed of.

HOW THE WRIGHTS DISCOVERED FLIGHT

THEIR EARLY HISTORY AND WHY THEY WERE KNOWN AS THE "MYSTERIOUS WRIGHTS" —SCIENTISTS NOT RACERS

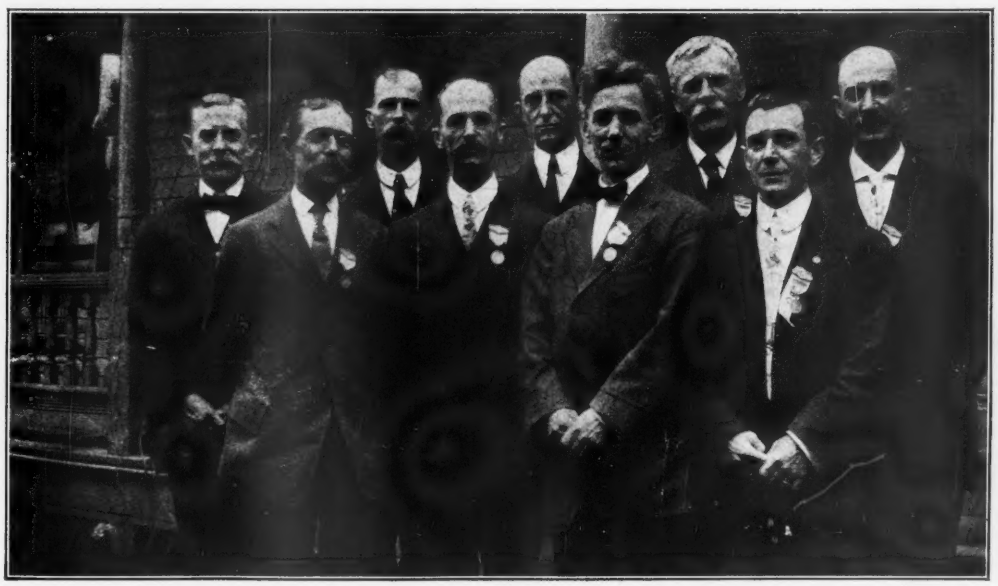
BY

ARTHUR W. PAGE

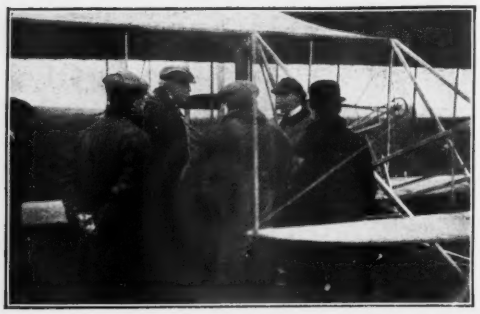
THE Wright brothers have so clearly taken a permanent place — an immortal place — in the history of inventions and of civilization that everything about these men already has an historic importance. Especially interesting are facts about their early experiments.

Yet few such facts are known; for they are surely among the most reticent of famous men. Their faces are familiar to all the world that sees illustrated journals, and their feats are known to all who read. Many thousands of persons have seen them fly. Yet if you were asked about their lives, and especially about the way in which they came to work out one of the greatest of all inventions, you would have to reply that there are few definite facts of common knowledge. The public knows as much about Watt's perfection of the steam-engine as about the Wrights' invention of the aeroplane, and more about Morse's early work with the telegraph or about Bell's with the telephone.

Dayton, O., the city that held their momentous secret for five years because it did not think it worth telling was, up to the time when the Wrights were "discovered" at Kitty Hawk in North Carolina, known to the big world chiefly as the home of a cash-register company. But it is much more than that. It is a solid industrial town of 150,000 people, in the centre of a rich



A CLUB GROUP INCLUDING MR. WILBUR WRIGHT AND HIS TWO OLDER BROTHERS



MR. WILBUR WRIGHT AND MR. ARTHUR BALFOUR, FORMER PREMIER OF ENGLAND

THE WRIGHT BROTHERS AND THE KING OF SPAIN

THE LATE KING EDWARD AND MR. WRIGHT

agricultural district. It has broad streets and well-built residences. The board of trade boasts a thousand factories for the city. Interurban trolley-lines go in every direction. Everything wears an air of prosperity. The only entirely inexplicable thing that I discovered in Dayton — aside from its singular apathy in regard to flying-

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PRESIDENT TAFT, THE WRIGHT BROTHERS, AND MISS KATHARINE WRIGHT

After the presentation of the medal given the Wrights by the Aero Club of America

THE BRITISH AERO CLUB'S DINNER TO THE WRIGHTS IN LONDON

machines — was that a large proportion of its Negro citizens voted the Democratic ticket at the last election.

When Dayton got the news last year through the Associated Press dispatches that two of its citizens were great men and had been greatly honored in this country and abroad, it prepared to give them an elaborate reception, but there were prominent Daytonians on the reception committee who had then never seen the Wrights. Yet the brothers had lived there practically all

PRESIDENT FALLIÈRES OF FRANCE WATCHING A FLIGHT

GOVERNOR HARMON, OF OHIO, PRESENTING A MEDAL TO THE WRIGHTS
At the celebration in their honor at Dayton

MR. WILBUR WRIGHT'S FRENCH COOK
Sent by the Mayor of Pau to prepare his meals in the little house built by Mr. Wright on the aviation field

MR. ORVILLE WRIGHT AND MR. H. BERG
President of the European Wright Company. (Mr. Berg is at the right of the picture)

their lives; they had skated, fished, bicycled, and gone to school with other boys. Apparently they had lived as their neighbors had. Their white frame-house at 7 Hawthorne Street looks much like the neighboring houses; and there was nothing in the town as they grew up or in the habits of the neighborhood to provoke their interest in unusual recreations.

But inside the house there was much to explain their interest in flying. Their father is an educated man, a teacher, an editor, and a bishop of the United Brethren Church, who had traveled at one time or another over many parts of the world. Their mother had attended college in the days when higher education for women was rare. The family was an educated family, both by years at school and college and by home influences. The two older brothers — one of whom now lives in Kansas, and the other (Lorin) is associated with Wilbur and Orville — went to college at Hartsville, Ind. Miss Katharine Wright, their sister, is a classical graduate of Oberlin College. In the natural course of events they, too, would probably have gone to college, but in their boyhood their mother died and Bishop Wright was often away from home, and the boys remained to keep the home for him. Their home had a mentally stimulating atmosphere. The family library contained nearly two thousand volumes, and included not only the masterpieces of literature but also numerous works on science and art.

In the single, brief account of their invention which the brothers have published, they wrote—in *The Century* of September, 1908:

"Late in the autumn of 1878," (Wilbur was then eleven and Orville some four years younger) "our father came into the house one evening with some object concealed in his hands and, before we could see what it was, tossed it into the air. Instead of falling to the floor, as we expected, it flew across the room and struck the ceiling, where it fluttered awhile, and finally sank to the floor. It was a little toy known to scientists as a helicoptere, but which we, with sublime disregard for science, dubbed a 'bat.' . . . It lasted only a short time, but its memory was abiding."

The memory, however, would hardly have been so fruitful had it been in less scien-

tifically disposed minds. The Wright brothers' education did not end with school. They were greedy readers of scientific and useful books, and they remembered and thought over what they read. It was this turn of mind and not the bicycle shop that led to the perfection of their flying machines.

Among other things which they read were some accounts of Otto Lilienthal's gliding experiments. In 1896 they saw a short notice in the papers that Lilienthal had been killed by a fall from one of his gliders. This turned their attention to the subject again.

BISHOP MILTON WRIGHT

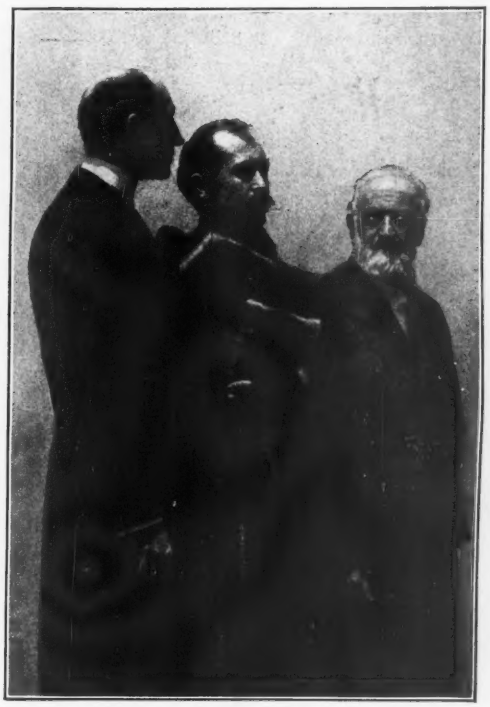
The father of the inventors, from a photograph taken several years ago

"It made us wonder," said Wilbur Wright to me, "what the difficulties were that could not be overcome." Thereafter they read more and more about man's attempts to fly. This was recreation for them, for they enjoyed all kinds of scientific inquiry. As the fascination of the subject grew on them, flying became their hobby. Finally in the autumn of 1900 they decided to try gliding experiments themselves. Bishop Wright was away from home at the time. One day he received a letter from Wilbur saying that he was going to Kitty Hawk to try a glider, for he could get more enjoyment out of that

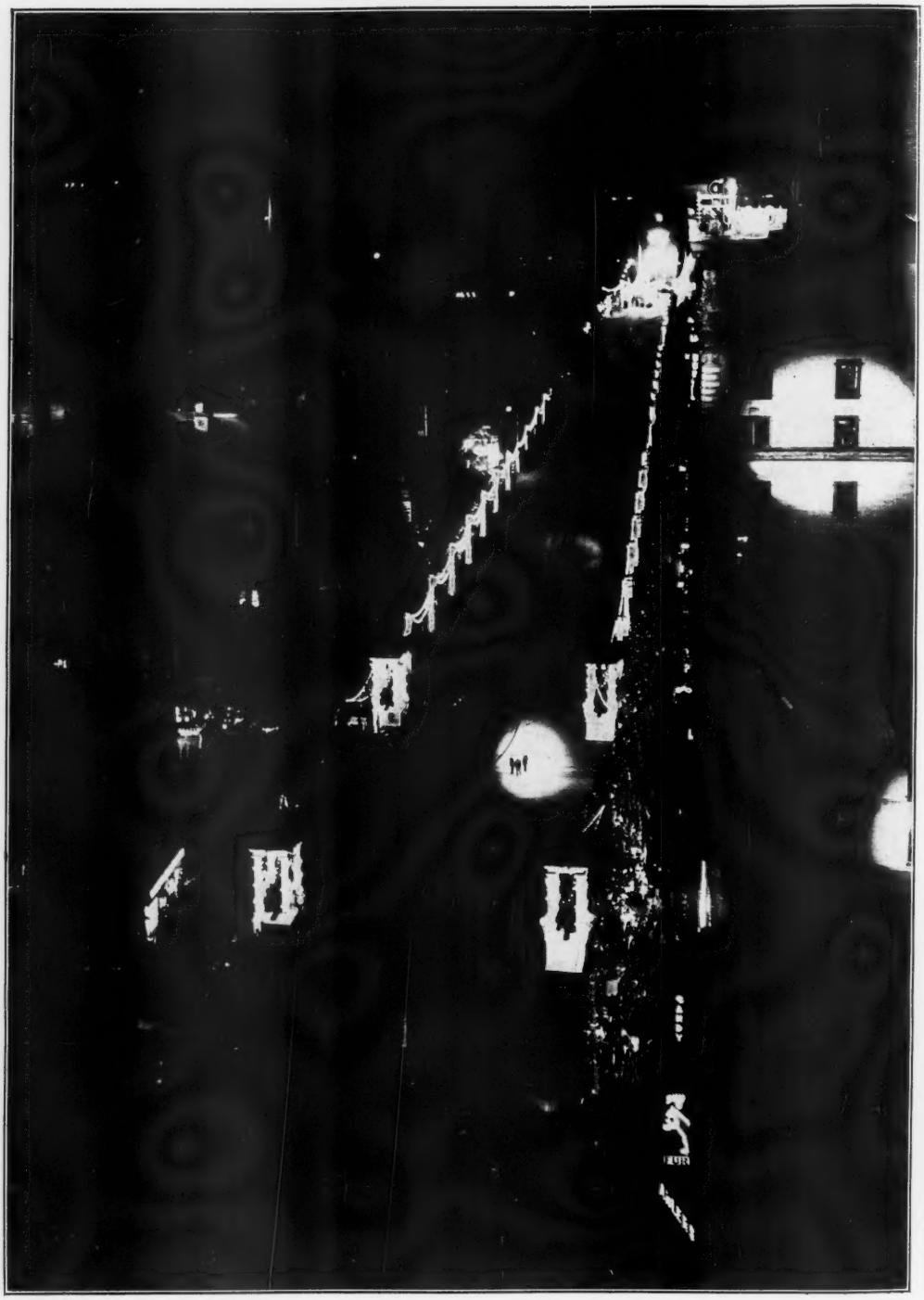
MISS KATHARINE WRIGHT, THE KING OF SPAIN, AND MR. ORVILLE WRIGHT

than by any other use of the same time and money. It was the first vacation of any length that he had taken. Some people would have gone hunting; others would have played golf; he preferred to experiment with his gliding machine.

From this time dates the actual constructive



MR. WILBUR WRIGHT, MR. ORVILLE WRIGHT, AND BISHOP WRIGHT

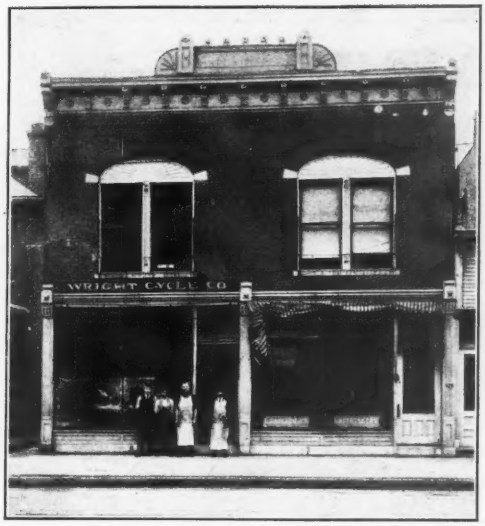


THE COURT OF HONOR OF THE CELEBRATION FOR THE WRIGHTS AT DAYTON, IN 1909

Part of a great reception which the city tendered its distinguished sons after they had been the sensation of Europe. Four years before, few people in Dayton would take the trouble even to go out and see them fly

efforts of the Wrights to learn to fly. At first their experiments interfered but little if at all with their other business, and they spent on them only what they could afford for recreation. They had no expectation of making money. But in three years, with this comparatively small expenditure of time and money, they had solved the problem that many men had given their lives and fortunes to for hundreds of years. By luck and a mechanical aptness gained in building bicycles? On the contrary, it was by scientific inquiry. When their aeroplane was on the sands at Kitty Hawk on December 17, 1903, no man had ever successfully maintained his equilibrium in a power-driven, heavier-than-air machine. Yet the Wrights invited the life-savers and some other people to come and see them fly. They knew that the machine would fly as well as men can know anything in the future, for they had worked out their formula for the actions of the air, verified them, and built the machine accordingly. Therefore it had to fly.

But they did not talk much about these things because the other folks in Miami City were not interested in flying-machines. For example, for a long time Wilbur Wright had belonged to a little social club of nine members. They knew him as a good business man who made good bicycles, sang "a pretty good first-bass," and talked well and generally humorously when he had something worth saying. He was once secretary of the club for a year, and his successor



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THE WRIGHTS' BICYCLE SHOP IN DAYTON
Where their first flying-machine was made.

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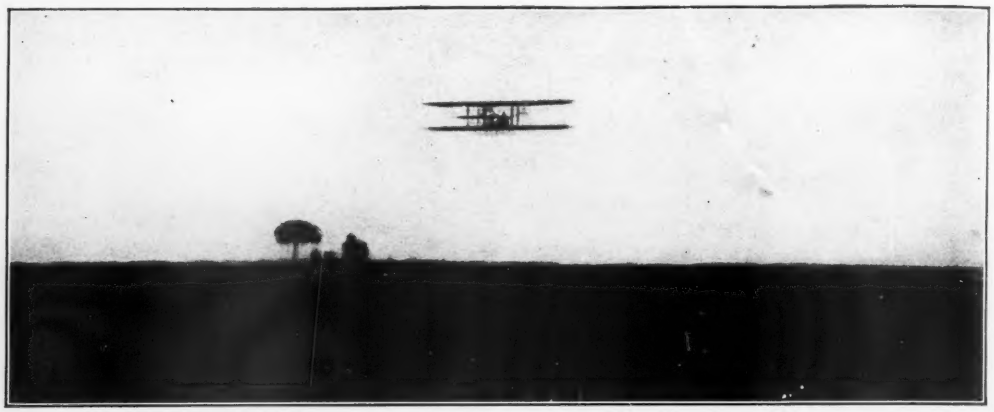
THE HOME OF THE WRIGHTS IN DAYTON, O



THE WRIGHT FLIER OVER THE CAMPAGNA AT ROME

says that his minutes were as funny as Bill Nye. But it was this same man who warned Wright in 1904 against "going crazy" about flying.

Their theory of lateral balance for an aeroplane is a wonderful thing, but it is no whit more extraordinary than their own mental balance. Where before in the world did men make a revolutionary discovery and neither hide it nor proclaim it abroad, nor let the gusts of public opinion upset them in any direction? People were looking for a means to fly before they knew that the world was round, or anyone knew that there was a Pole. Yet when the world in general would have made them strut their hour as popular heroes, the Wrights refused and maintained a serene and even course. For instance, all official Washington used to go out to watch Orville Wright's flights at Fort Myer, and the newspaper men became much exasperated because he would not take advantage of so favorable an opportunity to do something dramatic.

When the Wrights went abroad they were met by much greater demonstrations. In France the people wished to do everything for them. In one place the hotel-keeper

BEGINNING A 100-FOOT DIP ABOVE THE HUDSON RIVER, NEW YORK

According to Mr. Wilbur Wright, the most interesting moment of his flights ever photographed

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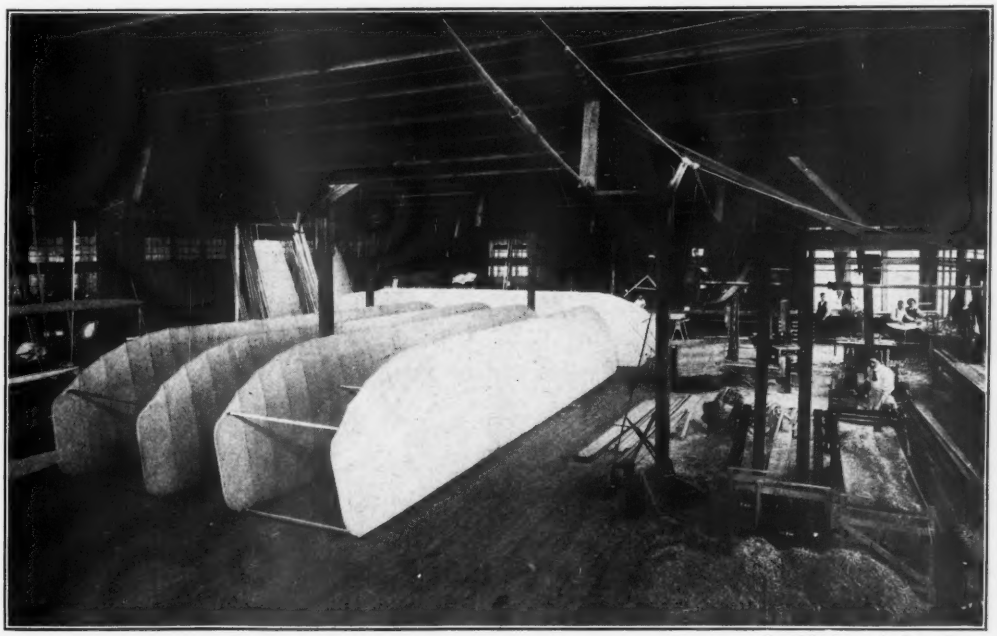
THE FACTORY OF THE WRIGHT AEROPLANE CO., AT DAYTON

even wished to board them free. When at Kitty Hawk, they lived and cooked their meals in a little shack; for convenience Wilbur Wright had a similar hut built on the flying-field in France, and he intended to cook for himself there, too. But the French felt that they could not allow this; and one morning when he went to prepare breakfast he found a French cook busily engaged in getting it ready. He did not know enough French to dismiss him or to find out who sent him.

After France had gone wild over one of them and Germany had turned its interest from Zeppelin in favor of the other, they came home and Dayton had a demonstration in



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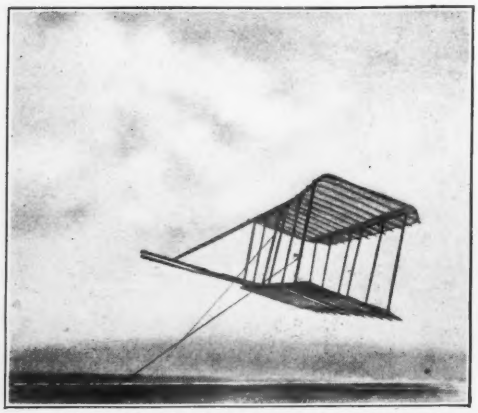
THE INTERIOR OF THE FACTORY AT DAYTON



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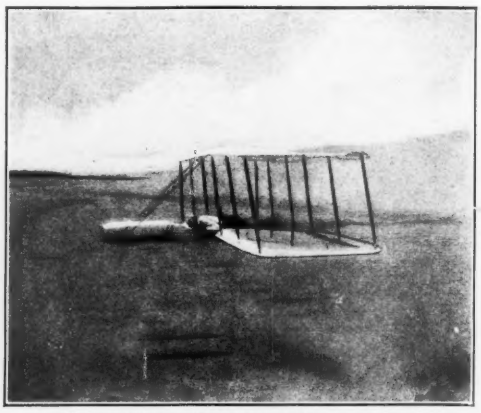
THE FIRST WRIGHT MACHINE

At Kitty Hawk, N. C., in October, 1900. It was designed to fly as a kite with a man on board, but for lack of suitable winds it was flown unmanned. The balancing machinery was controlled from the ground by cords



Photograph by Wright Bros. Copyrighted, 1910, by Brown Bros.

THE SECOND MACHINE

At Kitty Hawk, N. C., in October, 1901, almost twice as large as the previous one. It was unsuccessful as a manned kite, but when used as a glider went more than 300 feet, and maintained its equilibrium in a 27-mile breeze

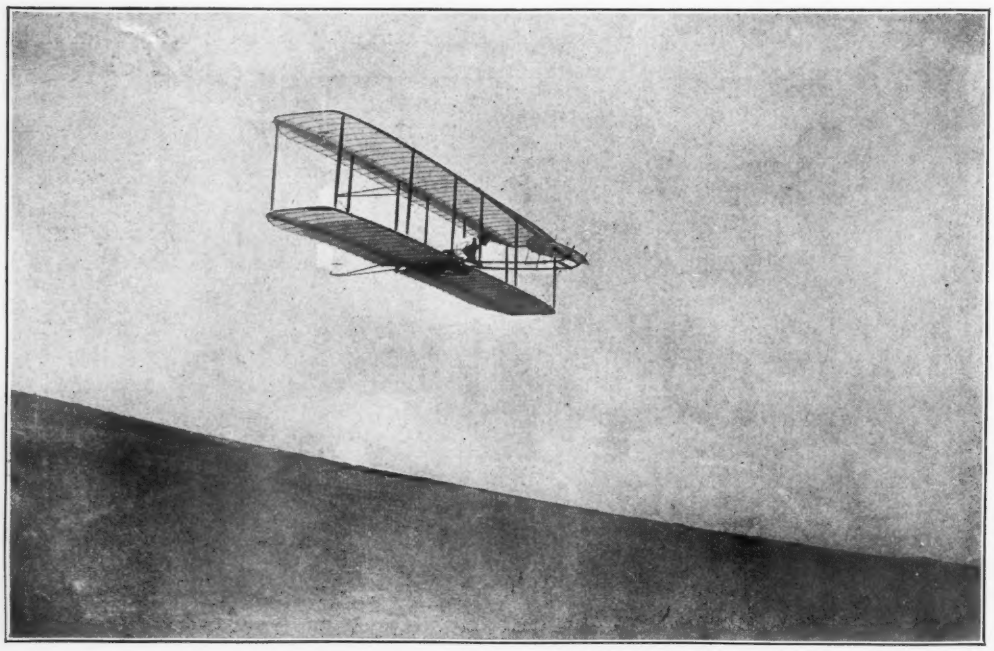
their honor. A committee met them at Xenia, a few miles away. The Wrights began immediately to ask about people at home.

"Look here, Wilbur," said one of the committee, "you'll see all those folks at the station in a few minutes."

"Why, who is at the station?" asked Wright.

"Oh, twenty-five or thirty of the boys," was the reply.

When the train rolled in they saw the streets black with people.



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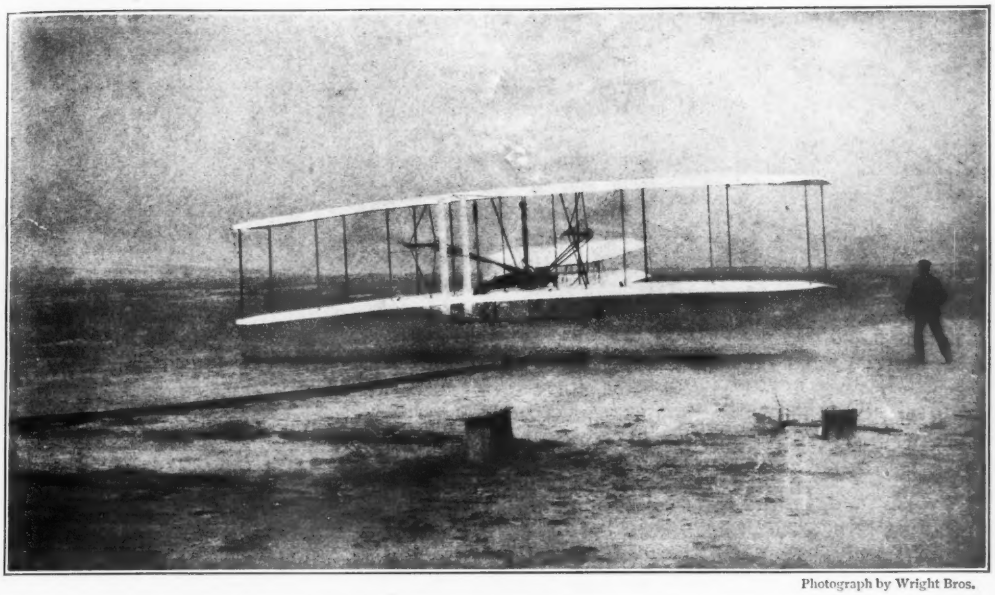
THE GLIDER OF 1902, IN WHICH NEARLY 1,000 FLIGHTS WERE MADE

The two previous machines, designed in accordance with other people's data, having proved unsatisfactory, the Wrights carried on a series of experiments and embodied in their new machine the knowledge gained



Photograph by Wright Bros.

LEAVING THE STARTING RAIL ON THE FIRST FLIGHT OF THE POWER-MACHINE

At Kitty Hawk, December 17, 1903, in the presence of three members of the Kill Devil Life-Saving Station, and two gentlemen from Manteo, N. C.

"I see the twenty-five or thirty," remarked Wright with a smile, "but I thought you folks had better sense."

True to their scientific type of mind, they will not prophesy. There is extant a newspaper interview with Orville in which the interviewer tried five times by different questions to induce him to say something

Photograph by Wright Brothers

FLYING NEAR DAYTON IN 1904

In an open field, in full view of a public road and a trolley line

Photograph by Wright Bros.

TWENTY MILES IN 33 MINUTES IN 1905

Three years before the "mysterious" Wrights were discovered by the world

about the future development of aeronautics; but, while questions on all other subjects were answered fully, these were all turned aside with "I don't think that I am much of a prophet," or some similar remark. Hashimura Togo remarked: "You have never heard true silence until you have talked with Wilbur Wright." This is wittier than true. But the Wrights surely are not loquacious.

I was asking Orville questions, when his brother came up, saying:

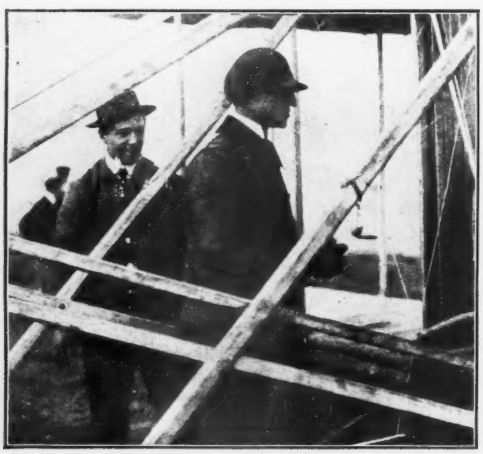
"Well, how is he standing the examination?"

I had just asked about the achievements of their machines in comparison with others. He smiled and said that although they were not racers they had never been beaten in any contest which they had entered. They do not think that speed is a great problem. "I hardly know," the younger brother once said, "what limit one could set to the speed to which it would be possible to build."

"It is easier to learn to fly than it is to walk," Wilbur Wright continued.

"But," I objected, "you learn to walk at a time when you are under some disadvantages."

"There are some disadvantages about learning to fly," he remarked half-humorously. Orville Wright went on to say that it was not very hard if one tried it a little at a time and did not try to fly high or turn curves before getting accustomed to the mechanism. Four men in England had bought machines and learned by themselves. Two hours in the air, taken a little at a time, he thinks is sufficient. What they wished to do, Wilbur explained, was to get time from business arrangements and injunction suits to prepare their scientific data for publication, complete it, and eradicate all small errors. "For," he said, "if there is a two per cent. error that can be found, we want that two per cent. corrected before publication."



A few days after this, Paulhan was asked at Los Angeles (after his flight of 4,165 feet up in the air) if he were not satisfied with having flown higher than any man ever flew before. Hitching up his shoulders and throwing up his hands, he said:

"Records, more records, better records until, *pouf!* breath goes out and I really find that path to heaven or to hell."

The remarks are typical, the one of a daring and dramatic French racer who will live in sporting annals for a decade, the other of a quiet, efficient, American scientist who with his brother will live in history until it ends.

Contrary to the usual fate of inventors, the Wrights seem destined to share well in the profits of their discovery, though early in the history of this invention they offered to sell it for $100,000. Their patents have been upheld in the courts; and as these patents cover most of what is known about flying, no aviation meet can proceed without their consent. Other people interested in flying called them an "air trust," and the public in some measure misunderstood their attitude. But their recent agreement with the Aero Club of America dissipated that. The Aero Club recognizes the rights of the owners of the Wright patents and refuses to countenance the infringement of those patents while the courts uphold them. It agrees to approve only such public contests as may be licensed by the Wright Company. The Wright Company, on the other hand, agrees to sell licenses to promoters for open meets whenever approved by the Aero Club of America. This agreement removes all the objections which had been raised to holding the international contest in the United States.

Up to the present there is no important piece of knowledge about flying which has not come from the Wrights. The Wrights flew in 1903, in 1904, and again in 1905 and 1906. But it was not until 1908 that their machine became known to the public; then, suddenly, many other people learned to fly. Other men have speed records and height records because that is their business.

If Professor Langley or Dr. Bell had made the first flying-machine, the public would hardly have expected them to fly for a $5,000 prize. These men were scientific men. So, too, are the Wright brothers. Theirs is one of the most purely scientific of all the world's great discoveries.

Yet how they made it, with little capital, at a distance from any scientific centre, is one of the stories that will last for all time; but it is a story that has not yet been fully told. Not the least wonderful part of it is that neither the people about them nor the larger public realized what was going on, and do not now realize the full measure of the achievement and the true position of the Wrights. For this public misunderstanding perhaps a bicycle-shop is as much to blame as anything else.

Instead of being "professors," or having "laboratories," the Wrights had made bicycles; and the public has seemed to infer that any skilled mechanic who had made bicycles could have made a flying-machine had he happened to turn his mind to it. They made good bicycles — one of them was ridden continuously for thirteen years — for they are good mechanics. But if they had continued the printing shop that they once had or had followed their father into the ministry, they would still in all probability have made their aeroplane. The bicycle business did not have much to do with their great invention. Perhaps heredity had something to do with it, for many years ago Bishop Wright, their father, who is still hale and hearty at eighty-six, invented a typewriter, though he did not perfect it, and he worked over other inventions. An older brother (Lorin) also made, patented, and sold an improved hay-press.

In October, 1900, the brothers had made their first gliding experiment at Kitty Hawk. The next summer found them there again, with Mr. Octave Chanute, of Chicago, an eminent engineer who had published his "Progress in Flying Machines" as far back as 1894. They had read in one of his later papers that he had verified some of Lilenthal's calculations and they wrote to him. Out of the correspondence came his visit to Kitty Hawk. He was as much astonished as he was pleased at the scientific character of their work. In 1902 the brothers made about a thousand gliding flights and both Mr. Chanute and Mr. A. M. Herring (who had also been interested in aeronautics) were there. In 1903 they

succeeded in staying up more than a minute in a glider — and then, in December of that year, they really flew.

Before beginning experiments they had read most of the books that were considered authoritative, but they did not receive a great deal of help from them in spite of the fact that in all that reading is a great deal of truth which would have helped tremendously had it been recognizable. But what looked most plausible in print was often untrue, and what was true was so mixed with error that it could not be disentangled.

In their early experiments they used the calculations of Langley, Lilienthal, and others, and built their gliders accordingly. But the gliders did not always glide. The Wrights would then change the apparatus in one way and another in the hope of improving it. As often as not they made it worse. Under this system they might have kept on trying all their lives without success. Others had done so before them.

But when they became convinced that the data upon which they had been basing their experiments was not accurate, they put it all aside and made their own data. They then found the reason for many previous mistakes, for the calculations which they had been using were sometimes as far as 200 or 300 per cent. out. Later, when people visited their shop, they saw little curved sheets of steel of different sizes and shapes. These the Wrights put into a delicate balance in a long tube through which steady currents of air were blown, changing angles and speeds of air, noting everything down, and then studying the mass of figures. They perfected their apparatus until it gave them identical results as often as they repeated an experiment (a thing that other experimenters had not succeeded in doing), and learned from comparing figures how to plot the shape of a surface so that it did what they wished it to do.

This is why they knew, before they had tried it, that their first machine would fly. They achieved their results neither by luck nor the process of elimination, but by scientific inquiry. Their first machine was built in accordance with the principles of aerodynamics which they had discovered.

The propeller was the only thing that they had not carefully worked out before beginning the construction of the motor flyer. For this they expected to get assistance from the data on marine propellers. But they found that although marine propellers had been in use for seventy-five years or more there was only empirical data concerning them. When the first turbine Cunarder, for example, took its maiden trip, it used nearly twice as much coal as would have been necessary if the propeller had been properly designed. In desperation they attempted to solve the problem of screw-propellers from a theoretical standpoint, a thing which had always baffled both marine and aeronautical engineers. Their final success in mastering this problem is the one feature of their work in which they themselves take special pride.

Henri Farman, who had raced automobiles before he took up aviation and had created a tremendous sensation in Europe by flying a kilometer (five-eighths of a mile) over a circular course on January 13, 1908, came to this country later in that year. Speaking of the requirements of the United States Government, which the Wrights promised to fulfill, Farman said:

"I have done some flying, but I do not try to do what your inventors must do at Fort Myer. I never fly in winds. Once I had a spill in France when I attempted it."

He also announced his intention to experiment with the controllable wing-tips, after the manner of the Wrights, and to use them in connection with the box-tail of his machine.

Not only he but every other successful flyer has done just this thing. This does not mean that such men as the Voisin brothers and others have not done scientific work for which they deserve great credit; but the fact remains that flight in Europe in anything more than parade-ground experimental ways began when the Wrights reached France in 1908. The French machines added nothing essential to the principles that the Wrights were practising.

The only American machines other than the Wrights' which have caught the attention of the public are the Curtiss biplanes, the first of which was built at the aerial experi-

ment station at Hammondsport, N. Y. But though Mr. Curtiss has flown the machine with the same daring with which he had formerly captured motor-cycle records, he also, was a follower of the Wright brothers.

Mr. Curtiss's Hudson River flight was made under an arrangement with the Wrights by which he could fly under bond protecting the Wrights in any possible loss for patent infringement, because Judge Hazel had granted a temporary injunction against the Curtiss machine. A few days after the Hudson River flight the Court of Appeals dismissed the preliminary injunction. The validity of the patents has still to be decided in court. Of the priority of their discovery there is no doubt.

To the wonder that two men working at odd times during a three-year period should make one of the great scientific discoveries of the world is added another — that the discovery should have remained unknown to the American people for nearly five years, and this in spite of the fact that the inventors had invited people to see them fly and had reported their progress to scientific societies.

To see the first performance in 1903, for which there was no rehearsal, the people from Nag's Head and the Kitty Hawk Life-Saving station in North Carolina were invited. It was a rather cold December day and not many came. The six who did come saw a sight which will be a proud memory in their families for generations —the first successful flight of a man in a heavier-than-air machine.

When the flight was over the Wrights telegraphed home about their success, and one of the telegraph operators along the line gave a hint to a reporter. His paper appeared the next morning with a report of what his ingenious imagination conceived had happened. A few days later the Wrights gave out a correct statement in which they said that they had flown "852 feet over the ground." The paper changed it to "852 feet up in the air," and so it appeared. No one paid any particular attention to the announcement, or to the fact that on the nineteenth they had flown half a mile. Even in Dayton no one seemed at all excited, and the Wrights did not talk much about it because the Dayton people did not take much stock in the flying idea.

In the spring of 1904 the brothers built a shed and put up a machine in a field about eight miles out of Dayton. A few days later they invited reporters from all the newspapers in Dayton, and many other people, to come and see a flight. A crowd of about one hundred and fifty went — but were disappointed. There was not wind enough to start with the short starting-rail which they then had. A few came the next day and again were disappointed. The engines missed explosions. The reporters wrote a kindly column about the failures. Afterward, when some farmer driving into town would report that he had seen the machine in the air, the papers mentioned the fact, but with no enthusiasm. The town, which in 1909 voted $20,000 to celebrate the Wrights' return to Dayton as the world-proclaimed inventors of the flying-machine, had in profound apathy refused to go eight miles to see the machine fly in 1904. The general attitude is expressed by the remark of a friend to Wilbur Wright:

"Look here, Will, if you keep on with these monkey-doodles you'll go crazy. I'm not sure you're not crazy now."

A few days later Wilbur Wright came into his office.

"Do you want to see me fly?"

"By yourself, or in the machine?" asked his friend; for, as he explained, he thought there was about as good a chance one way as the other.

Wright said that he was going in the machine.

"How far?" was the next skeptical question.

"More than eighteen miles. Orville went eighteen, and I am going further to-day."

And he did. He flew twenty-four miles and came down because his gasoline gave out.

In 1907, four years after the Wrights' first flight and two years after their machine had taken its present shape, the Government asked for bids for a flying-machine that would be able to carry two men, remain in the air an hour, and make a controlled flight of forty miles — and the Wrights said that their machine could fulfil these conditions. This and the persistent rumors that they had flown, which kept passing around from time to time but which seemed too preposterous to believe, finally aroused

a party of newspaper men to track "the mysterious Wrights" where they were "hid on the beach behind Kill Devil Hill" on Kitty Hawk sands in North Carolina.

The party went to Norfolk and then through the Dismal Swamp country to Elizabeth City. After six hours' travel down the river and across Albermarle Sound, they reached the little town of Manteo, where Sir Walter Raleigh's first colony landed. Thence the mail launch took them out to Kitty Hawk. They waded through the sand four or five miles on a circuitous route till they came in sight of the Wright shack, and there they hid. They could have gone straight over the hill to the aeroplane camp, but in that case they thought "there would have been no flights that day."

By the time the correspondents had accomplished all this they were as much impressed with the inaccessibility of the place as Wilbur Wright had been when he first landed there eight years before on his vacation. He and his brother had chosen Kitty Hawk quite without regard to the public, for at that time they had no idea that the public would be more interested in their vacation than in anyone else's. They had written the Weather Bureau asking where the winds were strongest and steadiest, and the Weather Bureau had said Kitty Hawk. They had then written the postmaster, locally known as "Bill" Tate, for facts about the country. It so happened that Tate had previously read a magazine article about gliders. His letter recommended Kitty Hawk as a glider resort but was not altogether clear about its transportation facilities. The result was that Wilbur Wright encountered all the difficulties which made such an impression on the New York journalists eight years later, and it took him the better part of a week to make the trip.

No matter how peculiar it might seem to the Wrights to be stalked in this manner in 1908 — after they had flown in an open field near Dayton alongside a public road in 1904, reported their success to scientific journals, and put almost everything on record in the patent office — nevertheless one of the five who tracked the Wrights to Kitty Hawk was right when he wrote:

"Then, bedraggled and very sunburned they (the reporters) tramped up to the little weather bureau and informed the world, waiting on the other side of various sounds and continents and oceans, that it was all right, the rumors true, and there was no doubt that a man could fly."

Wonderful as it may seem, that was the first the world knew of it. And even now the public hardly realizes that, as Captain Thomas Baldwin of dirigible fame says:

"If it wasn't for the Wrights we wouldn't be flying to-day, as we are."

TWO HINDRANCES TO PEACE

THE FEAR THAT FOOD AND RAW MATERIALS MIGHT BE CUT OFF, AND THE PERIL OF SUDDEN INVASION — A PRACTICAL PLAN TO REMOVE BOTH APPREHENSIONS AND TO REDUCE THE NECESSITY FOR ARMAMENTS

BY

CHARLES W. ELIOT*

PRESIDENT EMERITUS OF HARVARD UNIVERSITY

ALL peace promoters have been cheered by the progress made since Russia called the first Hague Conference toward the substitution of arbitration for war. It is plain, however, that much remains to be done before a permanent international supreme court is established with some adequate force behind it, such as control of

*At the Lake Mohonk Peace Conference.

credit, or armed police, or effective world-opinion, and that the race for armaments is hotter than ever.

There must be, then, some very strong reasons for the slow progress made toward an effective system of international arbitration, and for the continuance of the extraordinarily wasteful competition in providing armaments; for all the competing nations feel keenly the well-nigh intolerable burden of taxation which modern preparations for war on the instant, offensive or defensive, impose. I find these reasons in two chronic apprehensions felt by all the civilized nations alike — although the two are not equally felt by the different peoples, because of geographical and commercial diversities. The first of these chronic apprehensions is the fear lest the nation's exterior supplies of food or of the raw materials of its industries should be cut off. The second is the fear lest an immense hostile army should be thrown into the national territory with only a few days', or even a few hours', warning. Either of these chronic apprehensions may be suddenly exalted to panic by occurrences of a really trivial nature. The speech of a minister before a legislature, a note from a ruler, or even a short series of articles in an influential newspaper may raise either of these chronic apprehensions to the dimensions of a panic.

These fears are not fairly to be described as dreams or illusions or fantastic nightmares. They are not created, though they may be aggravated, by unscrupulous manufacturers, tradesmen, or newspapers. They are founded on historical facts borne clearly in mind by the present generation, and on generally accepted axioms concerning national well-being as likely to be diminished by being conquered or even invaded, and increased by any successful conquering. These axioms may be as absurd as the dueling code now seems to most Anglo-Saxons, but like that code of so-called honor they are generally accepted in Continental Europe and among large portions of the population of North and South America and Great Britain. It is a solid fact that an overwhelming majority of the English people feel it to be for them a matter of life and death that they keep ready for instant action fleets capable of preventing invasion and the cutting off of the food-supplies and the raw materials which come to them over seas; and so long as they seriously dread catastrophes of that nature they will keep on building preponderant fleets. They must have security against such ruinous calamities.

England and Japan are the two nations which may reasonably feel most intensely the apprehension about their food and raw materials; but nations whose territories are not insular may also feel it to a high degree. Thus, Italy must import by sea both food and coal; France would suffer much if deprived of sea-borne cotton; and Germany needs to import by sea not only much food, but a great variety of materials for its expanding industries. The territory of the United States is so vast and extends through so many climates, that it is difficult for us to realize how formidable to any nation which cannot raise on its own soil all its food and most of the important materials of the industries by which it lives, is the dread of the cutting off of a large portion of its food or its raw materials, or both. During far the greater part of the year England is not supposed to have in stock at any one time more than six weeks' supply of food for its population. In view of such a fact we Americans ought to be able to realize that this dread of the cutting off of essential supplies must be calmed and disposed of before the incessant preparations for war now going on can possibly be checked or stopped. A very important question, therefore, to be considered by those who wish to take effective measures to promote peace is this: What generally accepted rule of international action would give relief from this intolerable apprehension, and what new police forces would be necessary to secure the observance of that rule?

IMMUNIZE ALL MERCHANT-SHIPS

Confining our thoughts in the first place to operations on the oceans, we easily see that the adoption by a decided majority of the great maritime powers of the principle of the immunity of private property at sea would in itself go far to relieve from this great apprehension the nations that suffer most from it. If during a naval war all

merchant-vessels were free to come and go on the open seas without danger of capture or of any interference, a nation at war would have little reason to dread the interruption of its supply of either food or raw material. To affect dangerously its supplies, its adversary would have to establish a real blockade of its ports, which is a difficult and costly operation in these days of high-speed vessels independent of wind.

It may be observed in passing that changes in the definitions of blockade and contraband decidedly advantageous to neutrals were made by the Naval Conference in which Germany, the United States, Austria-Hungary, Spain, France, Great Britain, Italy, Japan, Russia, and the Netherlands participated at London in 1908–09:*

This Conference did work of high value, although only ten selected nations joined in it. The precedent may prove a very useful one.

The adoption on paper of this doctrine of the immunity of private property on the seas would not suffice, however, to relieve the intense anxiety of the civilized peoples about their essential supplies. They must see in readiness a police force capable of securing the execution of such an agreement in all parts of the globe. Can we imagine the creation of such a force? It must of course be an overwhelming international force, which no single nation would have a fair chance of successfully resisting, and it must be available in all the oceans.

These conditions would be fulfilled if the group of nations which took part in the Naval Conference at London, or even a smaller group of nations having extensive seacoasts like England, France, Italy, the United States, Brazil, Chile, and Japan would agree to the immunity of private property at sea and to the use of their combined fleets, or any adequate portion thereof, to enforce that immunity in every part of the world. The combinations mentioned would possess available ports in all the great divisions of the ocean. Several of the nations named have already expressed willingness to accept the doctrine of immunity for private property at sea. The United States has advocated it for many years. Other nations would probably wish to join such a league; but their adhesion would not be indispensable, though desirable.

Coincident with this agreement there would have to be another, in order to check the competition in naval armaments. The nations entering such a league would have to make an agreement — subject to periodical revision — not to increase their fleets beyond their present limits, and to build new vessels, class by class, only in substitution for vessels past service. Limitations on the size as well as the number of vessels of each class would also be needed, and each nation would have to be kept informed of the naval constructions undertaken by every other member of the league. Such agreements as these and such publicity seem not only possible but well worth while, if through such action that formidable dread of the cutting off of food-supplies and raw materials can be done away with. It is a hopeful fact that experienced public men in various countries are beginning to mention such novel agreements as not inconceivable.

The immunity of private property on the seas does not seem so remote as it once did, partly because the recent comparative immunity of private property on land during active warfare has not impaired the decisiveness of successful campaigns, and partly because the destruction of its mercantile marine has not proved to be in recent times, if indeed in any times, an effective mode of bringing a vigorous enemy to terms. During the Civil War of 1861–65 the United States lost nearly all its seagoing merchant-vessels, and has never recovered its former position in the carrying trade of the world; but this fact has had no appreciable effect on the prosperity of the country. Nowadays any nation can easily get all its exports and imports carried in foreign bottoms at low competitive prices. Moreover, looting

* The Declaration issued by the Conference by Art. 1, Chap. 1, limits blockade to ports and coasts belonging to or occupied by the enemy, which is a restrictive definition of high value.

In Art. 28, Chap. 2, the following articles are declared not to be contraband of war: raw cotton, wool, silk, jute, flax, hemp, and the other raw materials of the textile industries; rubber, resins, gums, and lacs; hops; raw hides; natural and artificial manures; ores, clays, lime, stone, bricks, slates, and tiles; porcelain and glassware; paper; soaps, colors, varnishes, chemicals like soda, ammonia, and sulphate of copper; machines used in agriculture, mining, the textile industries, and printing; precious stones; clocks and watches. It is obvious that this list, which is not the complete enumeration of Art. 28, covers articles of great value to every manufacturing nation, and that this clear declaration that they are not contraband marks a decided advance in the law of maritime war.

on land and privateering at sea are no longer considered respectable.

An agreement of this nature with regard to naval forces and their international use might have a large incidental value. It might show the way to organize an international naval police-force, subject to the orders of a permanent arbitral court of justice at The Hague. Other kinds of force can be imagined to secure the execution of the decrees of the court, as for instance the refusal of credit to a disobedient government; but all experience seems to testify that some adequate force must lie behind an international supreme court, as it always has behind every other court. Otherwise it may be feared that the court will not command in practice the perfect confidence of civilized mankind.

REMOVE PERILS OF INVASION

The other chronic apprehension which prevents the progress of arbitration methods and the reduction of armaments is the apprehension of sudden and overwhelming invasion of national territory by hostile land-forces. This incessant apprehension is extremely vivid, and is liable to explosive increment; and yet in this matter the civilized world has certainly made no inconsiderable progress. To be sure, modern means of transportation by land and water have quickened the apprehension, and spread it over wider areas; but on the other hand the press, frequent mails, and telegraphs and telephones have developed effective means of dispelling ignorance, correcting misunderstandings, and giving warning of storms of passion.

Certain distinct gains in respect to danger of invasion are plainly to be seen.

(1) No part of the civilized world is now subject to sudden invasion by hordes of barbarians, armed as well or nearly as well as the people whose territory they invade. In all conflicts with barbarians civilization has now an immense advantage in respect to equipment for fighting.

(2) It seems probable that dynastic wars will never occur again in the civilized world.

(3) Certain small European states have maintained themselves successfully as to their territory for nearly one hundred years in the presence of much more powerful neighbors, and if the judgment of impartial money-lenders is to be accepted, the stable *per capita* wealth of the small states is greater and safer than that of the large states. In a few instances, to be sure, the generation now passing off the stage has witnessed the forcible taking of parts of the territory of a small state by a larger one, and the surrender to the victors of portions of conquered territory.

(4) The great costliness of modern warfare in both blood and treasure tends to prevent the outbreak of actual war. Indeed, the costliness of mere preparation for war has increased by leaps and bounds during the past twenty years; and recently aviation has started expenditure of a new sort. The masses of the people begin to realize that they pay the costs of war; and they are not so dumb and helpless as they used to be. Hence, perhaps, the encouraging fact that huge armies, ready for instant action, have faced each other in Europe for forty years without once coming into collision.

(5) Republican Switzerland has shown how the entire male population capable of bearing arms may be trained and held in readiness for defensive warfare without abridging seriously the industrial activities of the people, and without maintaining any standing army which could be used for offensive purposes outside the national territory.

These are all good omens for peace; but they afford no effectual security to any European people, whose territory has not been declared neutral, against the sudden invasion of their territory by a formidable alien force capable of inflicting immense losses and of extorting a vast ransom. The Swiss experience, however, is more than an omen, for it shows one way of changing Europe from a group of fully-armed camps always ready for hostilities abroad, into a group of peace-expecting states, each maintaining a strong protective force, but no aggressive force. Civilized society is still founded on force, but that force should be a protective force. In practice it would be easier for a large state than for a small one to adopt this excellent Swiss method. Moreover, the territories of large states might be "neutralized" by agreement, as well as the territories of small states.

On the whole, the only way in which promoters of peace can at this moment make head against the apprehension of invasion is to urge the making of arbitration treaties which contain no exceptions, and the establishment of a permanent court of arbitral justice. The reduction of armaments on land must await the establishment of such a supreme court, unless, indeed, neighboring nations by twos or threes can make local agreements for reduction analogous to the invaluable arrangement made in 1817 between the United States and Great Britain concerning armaments on the Great Lakes.

THE COLONEL AND JOHN BULL

WHAT THEY THOUGHT OF EACH OTHER

BY

WILLIAM BAYARD HALE

"REALLY a good sort, don't you know, when you once get at him. We can forgive him no end of bounce and bluster, for his heart's in the right spot."

They were discussing Theodore Roosevelt — three typical Englishmen, beef-red as to visage and pink as to pate, as they ate their mutton with great wedges of "bubble-and-squeak" and drank their port wine in the comfortable dining-room of the ——— Club. And their verdict was the general verdict of Englishmen.

"God bless us, things are not what they were in the old days, but there are many worse things than this American chap, as cocksure as you please about things he doesn't know much about. A good sportsman, he, and on the whole the right sort."

The mutual experiences of John Bull and the Colonel were more interesting than those involved in Mr. Roosevelt's visit to any other foreign people. And this in spite of the fact that the death of King Edward interfered with the programme of festivities designed to make them acquainted with each other. Not only had many public demonstrations to be abandoned, but those that were carried through could receive only scant attention from a press occupied with the overshadowing topic of the death and burial of the King and the inauguration of a new reign, with all its social and political problems.

Indeed, as it happened, the visit coincided with a greater number of news events than are often crowded into a period of three weeks. The funeral implied the coming and going of eight kings and sixty royal princes, with an immense volume of personal gossip and political speculation. Besides all this, during Mr. Roosevelt's sojourn, a French submersible was lost; a flying machine crossed the Channel and returned after dropping a letter on French soil; a war balloon made a midnight trip over London; the year's Derby was run; the International Horse Show was opened; the King and the Queen celebrated their birthdays; the Government of United South Africa was inaugurated; the comet was expected, and a session of Parliament was opened.

This is a pretty full news-schedule. Naturally distasteful as publicity is to Mr. Roosevelt, he must have felt that it was hardly fair to put him into competition with a combination of kings, comets, and airships.

During his first ten days in England, Mr. Roosevelt was not "featured" in the newspapers. A paragraph in the southeast corner represented the London editors' idea of the importance of his presence in

the island. At the King's funeral he willingly consented to be effaced. Whatever may have been the emotions of the representative of another Republic, the Special Envoy of the United States was quite content to ride in a black carriage, not only in the rear of the chromatic clamor of the kingly cavalcade, but even behind "the Chink and the chambermaids" — to adopt the irreverential language by which a disgusted Westerner designated the Chinese Prince and the ladies of the Royal Household.

Later it became known that Colonel Roosevelt had been the life of the party, alike at the big Buckingham Palace dinner, blasphemously known in exclusive circles as "the wake," and at the luncheon at Windsor. There was some disappointment among Englishmen that he did not shoot out the lights or do a war dance amidst the royal plate, but, eventually, well authenticated rumor was current that kings at near-by tables, after preserving the appearance of interest in the frivolous conversation of their neighbors, had one by one gravitated toward the Colonel, with such grave inquiries as "I beg your pardon, but precisely what do you mean by 'a two-gun man'?"

But it was the Guildhall speech that introduced Mr. Roosevelt to the British public — and the introduction was not auspicious.

Precisely what induced Mr. Roosevelt to make the speech he made in the Guildhall this article does not presume to say. He knew full well that the propriety of it was questionable; he knew it would be questioned. Undoubtedly Mr. Roosevelt felt strongly the sentiments he uttered; there is no conviction of his life more deeply grounded than that of the right (or, as he would put it, the duty) of the strong man to rule over the weak. Undoubtedly Mr. Roosevelt thought England needed to hear that duty preached. His willingness to preach it was so great that it overcame his natural reluctance to become — as he realized the speech would make him — "a front page display." At all events, he preached it — and instantly became the most conspicuous figure of the hour.

From that day until he sailed from Southampton he was never out of the public eye. His sayings and doings were chronicled with the keenest eagerness.

The fact that the address delivered by Mr. Roosevelt when he made his "visit to the City" and became a freeman of London, created a sensation, is known in America. The proportions of the sensation are scarcely appreciated. As the incident is likely to have its part in influencing the state of public feeling toward America in England, it is perhaps worth while to dwell a moment upon it.

My observation of the manner in which the audience received the address, and the opinion concerning it that I heard from scores of English acquaintances and friends do not agree with the reports cabled to America. Before he left England, Mr. Roosevelt was understood and admired, but the day after his denunciation of the weakness of British rule in Egypt he was everywhere looked upon as an ill-mannered busybody.

There was no mistake as to the feeling of those who heard the speech. They were already in an ill-humor because the guest to be honored was half an hour late in arriving. During the awkward wait, comment was heard on every side on the "punctuality of princes" and the carelessness of ex-Presidents. It was not his fault, but nobody knew that. When the nature of the address became clear there were distinct exclamations of astonishment in the part of the hall where I was seated.

The attitude of the candid friend is one which the Englishman likes to assume himself, but to be himself lectured by the candid friend is gall and wormwood to him. The Guildhall audience was made up chiefly of those who held the sentiments which the speaker advocated. Most of its members were against the Government. But it went hard with them to hear from the lips of a foreigner criticism which they themselves had freely cast on the administration of Egypt. As for those to whom the speaker's sentiments were unacceptable, they were unable to restrain murmurs of protest and anger. I write simply as a reporter when I say that the overwhelming, even though unexpressed, sense of the assembly was that Mr. Roosevelt's speech was an impropriety and an impertinence.

Before we passed out, I talked with more than twenty gentlemen, and without exception all expressed regret that the speech should have been delivered. Nearly all, however (and this is the significant fact), declared their impression of the speaker's sincerity and earnestness and their admiration of his personality.

On the morrow, opinion (as publicly expressed) seemed to divide sharply on political party-lines. Mr. Roosevelt was denounced as a dangerous guest, an insolent meddler, a fountain of clap-trap, a political Barnum, a rowdy, barrack-room sentimentalist; his address, a compound of jingo-buncum, egotistical rigmarole, crude reasoning, and sham heroics. On the other side, it was declared to be a useful, though an unpalatable warning. That there was from any quarter a thorough-going, sincere commendation of the speech I do not believe. The opposition to the Government made all they could of Mr. Roosevelt's testimony as to discontent in Egypt, but behind every utterance was the knowledge that this outburst of a foreign critic had made the problem harder, not easier, of solution. Much was made of the fact that the man who declared one day that an assassination traceable to Nationalist aspirations proved the Egyptians unworthy of self-government was, on the following day, the luncheon guest of the Irish Nationalists; and much was said of the Phœnix Park murders — the assassination in Dublin, in 1882, of two British officials for Ireland — as well as of the three murdered American Presidents. A faithful report of the sentiment aroused by the speech in England must say that it was all but universally regarded as a gross error — howbeit one that a vigorous man, of strong conviction, might make. Colonel Roosevelt himself is the last person who will learn the real sentiment of the English people toward his speech. It would not be surprising if he believed and still believes himself approved.

At all events, from the hour of the Guildhall deliverance Mr. Roosevelt's good nature carried all before it. He was pleased with England and the English — and not displeased with himself. He had been eating his way through lordly banquets, but now he was seen and heard at a number of semi-public gatherings of interesting men, at all of which, rising a person disliked, he sat down in the midst of newly-won friends. Mr. Roosevelt has acquired a surprising happiness of phrase and a charming quality of humor. His little unpremeditated speeches are perfect in their way.

One of the best was that at the midnight supper in Stationers' Hall. The company was one of rare distinction. In front of the guest was the composing-stick used by Benjamin Franklin. It was labeled "The Big Stick," and afforded the Colonel a text for talk in a familiar, conversational vein that revealed to Englishmen more of the man than any other utterance to which they listened.

Another especially felicitous speech was one made in the Oxford Town Hall, whither the City Fathers took Mr. Roosevelt before delivering him over to the tender mercies of the University.

Mr. Roosevelt liked Oxford — though he had never before taken the trouble to visit it. He was whisked about from Christ Church to the Bodleian Library, to New College, and to Magdalen on a rainy day, and he still knows nothing of the sweet secret beauties of the gray old city.

If he didn't see much of Oxford, all Oxford came to see him, and stood an hour in the rain, which fell in sheets, soaking the gowns and hoods until the scarlet of doctors and the crimson of masters merged into sodden rags. When finally the doors swung open, one rush filled area and galleries with an audience doubtless as learned, certainly as well soaked, as any that ever gathered in the Sheldonian Theatre.

An Oxford Convocation is not a solemn affair. Solemnity is furthest from being its dominant note. By immemorial right, the undergraduates are free to bait and jolly the candidates for degrees, and seldom do they fail to exercise their privilege. It is very curious that this time the undergraduates were silent. But fun was not wanting: it was provided by the Chancellor, Lord Curzon, who presided.

Lord Curzon is a man of fine presence, sonorous voice, and marked dramatic instinct. He employed all his gifts effectively. In his mouth the sonorous Latin failed not to carry its good humored raillery.

Lord Curzon frankly grinned as he waved the beadles toward the door crying, "Go beadles, lead in the honorable man," and then welcomed him, smilingly exclaiming:

"Behold, Vice Chancellor, the promised wight
Before whose coming comets turned to flight,
And all the startled mouths of seven-fold Nile took fright!"

There were murmurs of amusement at the reference to the fading comet and the horror of Egypt, and these rose into noisy mirth as the Latin speech went on to explain, how, having slain African beasts for relaxation, the candidate was returning, like another Ulysses, after visiting many cities and "discoursing on many themes." There was a howl of joy from the throng of gowned and hooded dons when the Chancellor turned to Mr. Roosevelt and addressed him as "*Strenuissime.*" They had roared "*placet*" when the Chancellor asked them to vote the degree.

Mr. Roosevelt stood with a set face, only occasionally breaking into "that strange leonine smile," which still further amused the audience, as Lord Curzon poked more fun at him, telling him, with cunning allusion to the Guildhall sensation, that at Oxford they were used to lectures, were quite prepared to be lectured that day, knowing perfectly well how little lectures amounted to anyway.

The Romanes Lecture of 1910 is the most ambitious piece of writing Mr. Roosevelt has ever attempted. He himself believes that it represents his best thought and literary effort.

The opinion of Oxford, as gleaned from talks with old friends in common-room and hall, in the evening, would scarcely regard the lecture as one of note from a scientific standpoint. But there again I found unanimity in admiration of the personality and spirit of Theodore Roosevelt. And it may be said that the effect of his appearance at Oxford became and remains the impression Mr. Roosevelt made in England. England did not assess the ex-President as an intellectual giant; it did not like his manners, but it yielded him profound admiration as a man — a man of conviction, zeal, and strength of will.

No account can be given of what passed at Buckingham Palace, Marlborough House, and Windsor Castle. His experiences with royalties, not alone in London, but in other European capitals, will never be narrated by Mr. Roosevelt. It is true he traveled as a private citizen, and talked with kings and ministers as a private citizen, but he had been a chief of state during seven years in which some of the most delicate international situations of modern times had arisen, and, to a degree greater than is known, a participant in their settlement. Furthermore, it was everywhere believed that he would soon resume the office which he had entrusted to his former Secretary of War.

The friendship of the United States is the biggest asset in the international world. Germany in particular is straining every nerve to secure it, in order not only to weaken England but to strengthen itself against Japan. The Kaiser did not fail to use the opportunity for the exercise of his eloquence and personal charm.

But in every capital he visited, the ex-President was made to feel the warmth of his welcome both by the government and the people. As to Vienna alone, some qualification must be made. Here, though the venerable Austrian Kaiser gave every expression to his liking for the visitor, the Archduke Franz Ferdinand was absent. This was felt by Mr. Roosevelt. The two met at Venice and again at King Edward's funeral, but the absence of the future Austrian Emperor, already the greatest figure in Central Europe except the Emperor William, was remarked by all diplomats. If Mr. Roosevelt believes that the Archduke's absence from Vienna at the time of his visit was due to lack of sympathy on the part of a reactionary prince with the free and easy manners of a republic, Mr. Roosevelt is mistaken. It can be stated that the Archduke's dislike of the former President is due to his recollection of the circumstances attending the recall of Mr. Bellamy Storer.

What the Emperors and Kings said to the distinguished American is not disclosed, but I am in a position to state that each of the various royalties did have a chance to say something. Also, that each

had an opportunity to listen, none being deprived of advice who had need of it.

Mr. Roosevelt contracted an especial liking for King Haakon of Norway. The King of Spain won his favor. Expand the word "interesting" and pack into it all the meaning for which it has capacity — and you know how the ex-President found the Kaiser.

I fancy that on the whole, however, their Majesties, the Sovereigns of Europe, failed to impress the American visitor. Perhaps he saw too many of them. There was no lowly reverence in the tone in which I heard him casually and innocently refer to "the third king on the right." No one need fear that the Colonel's head was turned by his hob-nobbings with monarchs. He fulfilled the proprieties of every occasion with complete dignity, though possibly in some cases with inward amusement. He felt a little queer, he confessed, the day of the royal funeral, in a dress suit at nine o'clock in the morning; felt somehow as if he were just recovering from a glorious purple night.

But this was a very mild concession to convention, and Mr. Roosevelt has a philosophy capable of meeting even more serious sartorial situations. "There is only one thing more snobbish," he said, "than putting on an outlandish dress, and that is to make a point of refusing to put it on when occasion demands." He was intensely delighted a few years ago when a Western statesman turned down the offer of a diplomatic post with the words "Thanks; no purple pants for me!" And he gleefully tells little stories of Washington squabbles over precedence (which he correctly pronounces "preceedence"), quite as amusing as any he encountered in Europe, even the delightful comedy enacted by the Archduke of Austria and the Czar of the Bulgars when — but this is forbidden ground.

In England Mr. Roosevelt was particularly glad to make or renew the acquaintance of Mr. Balfour, Mr. Kipling, Lord Roberts, Lord Kitchener, Sir Harry Johnston, and Captain Scott. Long and delightful were the hours spent in retreat at "Chequers Court," Mr. Arthur Lee's country house, in conversation with thinking and doing men like these. He passed an especially happy day with Sir Edward Grey on a long tramp through the New Forest. It was noted that he had no time for expatriated American men, or American women married to English titles. Mr. Roosevelt and Mr. Bernard Shaw did not meet. I wish I were free to give the Colonel's opinion of the Englishman; it may be said, however, that it fully reciprocates the dramatist's scorn and pity. Curiously enough, however, Mr. Roosevelt desired to meet Mr. Gilbert Chesterton.

It was with the appropriate emotions, Mr. Roosevelt assured us, that he steamed down Southampton water on the special tender and stepped on board a ship bound for home.

Going out on the *Hamburg* Mr. Roosevelt had been gay and talkative, mixing freely with the passengers and making especial friends of all the children on board. Coming home on the *Kaiserin Auguste Victoria* he kept almost entirely to himself. Much of the time he was engaged on his African book, the last sentence of which was completed before the voyage ended. He gladly welcomed the suggestion of a committee, that he give the passengers an opportunity to greet him, and I had the pleasure of presenting the ship's company, first and second cabin, one by one, on the gaily decorated deck one afternoon. With this exception, few of those on board except personal friends saw anything of their fellow-passenger.

He had time, however, to interest himself in the steerage and the crew. There was a religious service on Sunday morning in the first cabin. The sermon — an excellent one — made copious reference to scribes and Pharisees, publicans and sinners. Mr. Roosevelt at the close of the service beckoned to me and took me out on deck, where, between a brisk walk and vigorous talk he worked off his feeling on a subject which the sermon had suggested to his mind.

"Did you ever stop to think," he exclaimed, "who the Pharisees and who the publicans and sinners are, in modern language? We who were in the congregation to-day are the Pharisees — the only people who are expected or allowed to go

to church. And the publicans and sinners are pretty well represented by the steerage and the stokers, who were prayed for to-day as 'the humblest souls far down in the bowels of this ship.'

"Now, I tell you, religion has just as much to do for publicans and sinners as it has for Pharisees, and it riles me through and through that we should have it in our comfortable cabin, and they should go without it in their uncomfortable quarters. Let's see if we can't do something to carry this righteousness down to the steerage people and the stokers. What do you say?"

In half an hour it was all arranged. The steerage was full of Poles, and the stokers were Germans. We found three Roman Catholic priests in the second cabin, a Pole, a German, and a Frenchman, and they undertook to conduct services in the steerage. The prospect of a visit from "President Roosevelt" vastly excited the lower regions of the ship, and insured a big attendance at the services, which but for him would not have been held.

The scene in the steerage when, under the lead of Captain Ruser and First Officer Schetelig, we descended into it, was one of the most interesting that even the far-traveled ex-President had ever seen. Twelve hundred Poles were crowded between the low decks, forward. The place was clean; the immigrants themselves clean and neat, but lowly as only the poor of Europe can be, and packed so closely that they could move only in unison. In the midst was a box draped with the German and American flags, and on it two candles, their light shining on the still, strained, faces — faces of hundreds of dark-browed men, wan women, and, in the front ranks, hundreds of young girls, pretty enough, but spiritless and melancholy. They stood in perfect silence. Mr. Roosevelt was deeply touched, and spoke a few words to the Polish priest, asking him to say how earnestly he wished the adventure into the new land might be the turning-point in their lives; wished that they might find there all their dreams had painted for them; and how earnestly he, as a citizen of the great republic, welcomed them to it.

When the priest translated, the crowd began to weep, with what emotion we could not tell. Then they fell on their knees, all together, and, led by a priest, sang a litany, long and solemnly weird. How they sang! and in what sudden silence they received the blessing! As we started out down the narrow human lane opened for us, a little maid who had been singing like an angel seized Mr. Roosevelt's hand and kissed it. Half a hundred followed the example before the victim could draw his hand away; then they caught the skirts of his coat and pressed that to their lips. We escaped in a shout that was meant for "Long live President Roosevelt!"

There were fewer in the third class (where the fare is $5 higher, the quarters far better) and the scene lacked the poignant pathos of that in the bow. Here, after prayers, Mr. Roosevelt spoke, partly in excellent German, telling the girls they must be careful into whose hands they put themselves when they reached New York; urging the lesson of honesty and mutual helpfulness, and especially charging all that they were going to the new land to find that they had there not only new rights but new duties as well. It was a far cry from Oxford to the steerage of an immigrant ship, but this was the same voice and the same message that we had heard in the academic city.

Mr. Roosevelt was particularly interested in the third class; he would like to see the old steerage done away with, that all who come to America might, from the beginning of the voyage, feel that they were entering into a new life of self-respect, with privacy and cleanliness.

And so he came home, as he had sailed away — full of interest in all things human, but especially in the cause of the man underneath; full of homely advice; enjoying life and wanting all to enjoy it. He was much interested in the news daily received by wireless from the training camp of the big prize-fighters out in California. He was chuckling for days over a saying of John L. Sullivan which we had heard just as we boarded the ship: "The Almighty played a mighty mean trick on the Irish when he made Theodore Roosevelt a Dutchman." There was another Irishism he relished and several times repeated as we drew near home — the comment of Mr. Dooley on Admiral Dewey's fate, to

the effect that Americans ought to build their triumphal arches of bricks so that they would have something handy to throw at the hero the next day.

He had sailed away a year and two months since. He was by the calendar older; he was richer in experience and somewhat grayer as to moustache, but there was no real change in the man from the day he sailed away to that moment when, in the cool of a June morning, there sprung out of the mist the shape of a great gray battleship, which the suddenly lifting fog and a burst of sun showed dressed with gay bunting, her men at quarters and a scarlet-coated band massed on the side, and there came the strains of the "Star Spangled Banner," while the flash and boom of the first of twenty-one guns echoed back from the still invisible hills of Staten Island.

A GOVERNMENT SELLING POWER

THE PROVINCE OF ONTARIO SPENDING MILLIONS OF DOLLARS TO GIVE CHEAP POWER TO A REGION OF NEARLY EIGHTEEN THOUSAND SQUARE MILES

BY

M. J. PATTON

(MEMBER OF THE CONSERVATION COMMISSION, OTTAWA, ONT.)

THE Province of Ontario, in partnership with a group of towns, has gone into the power-transmission business on a large scale. The experiment is one of the most interesting phenomena in the business world to-day. Practically, the effect of it is to make the power of Niagara available at reasonable prices in an area of that province nearly 300 miles long by 60 miles wide. It creates a favorable manufacturing region of nearly 18,000 square miles where no such region existed before.

It has taken nearly ten years of agitation and hard work to bring the participants in this scheme to the point of real work. The first gun was fired by the Toronto board of trade in 1900. At that time the plan seemed visionary. Then came the coal strike of 1902. It was a catastrophe in Ontario. It closed most of the factories, brought a winter of real hardship to thousands of Canada's citizens — and left in the minds of men a firm conviction that something had to be done to make the province independent of the Pennsylvania coal-fields. The retail price of coal in Ontario has always been considerably above the price at equally distant points in the United States.

Here was the lesson. The organized boards of trade and Canadian manufacturers' associations of the province took it to heart very quickly. The two-year-old agitation of the Toronto board of trade swept over the western half of the province with great rapidity. Where men had been lukewarm or skeptical, they became first inquisitive, then warm, then eager. In July, 1902, a meeting at Berlin, Ont., passed a motion asking the Ontario government to arrange for transmission of Niagara power throughout the western half of the province.

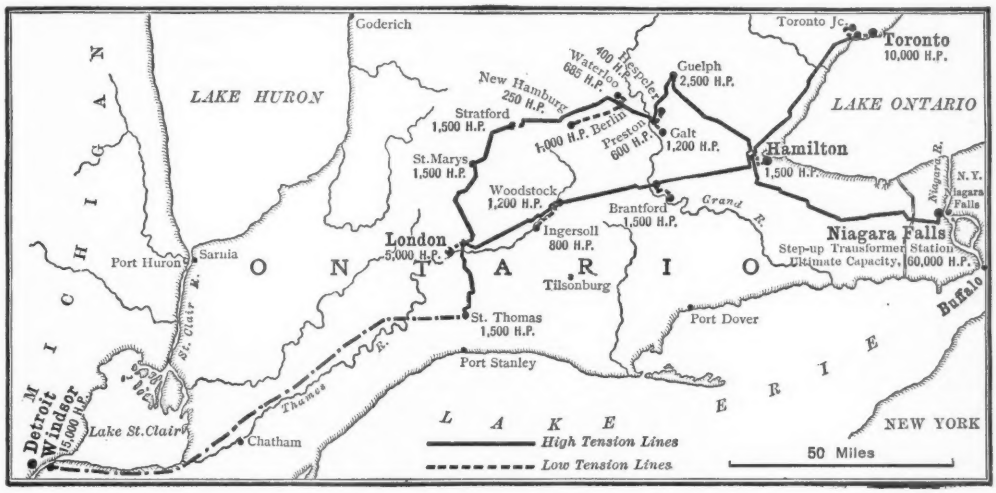
At the very next session, the government responded by granting permission to the towns to make investigations and to do what they could do. Seven cities at once appointed a commission, which selected a site at Niagara for a power-plant and found out what it would cost down to the last dollar. They figured the cost of a 100,000 horsepower plant and transmission system at $11,909,100. They proposed that the municipalities participating should finance

the whole scheme with bonds running forty years.

It was quick work — and it looked like business. But the Ontario government had other things to think of in addition to the interests of the scattered towns. A good many millions of dollars had been invested at Niagara by private companies, under Ontario laws. In 1905 the government appointed a new commission which went to work on another tack. Its report, filed quickly, recommended that instead of generating power, the municipalities and the government should buy it from the companies already in business.

This crucial stage of the fight was soon over, but its wounds are not yet healed. But the government has gone on. Now the battle has been transferred to the courts and the corporations are petitioning the Dominion government to pronounce the hydro-electric legislation beyond the power of the provincial legislature.

The end of the fight is not yet reached, but the issue is clear. In October, 1908, the commission signed a contract for the building of the transmission lines. This initial contract called for 293 miles of line. Most of it is on steel towers, over a right-of-way obtained under easement. It is equipped



A 400-MILE GOVERNMENT-OWNED POWER-LINE

By which the Province of Ontario distributes cheap power from Niagara to the Canadian towns between Buffalo and Detroit, throughout a region of 18,000 square miles. Lines equally long in the United States would put Niagara power in Pittsburg and reach almost to New York

By the end of 1907 the preliminaries were finished. Then, in January, 1908, the proposition was put before the electors in the various towns affected. Almost without exception the majorities for it were overwhelming. Clearly the people meant business.

Loud-voiced, bitter, and acrimonious were the debates heard in the Ontario towns concerning the "hydro-electric scheme." Everyone was a partisan, one way or another. It has been charged that most of the opposition was sedulously planted and carefully nurtured by the big corporations at Niagara. That needs proof — but it is a conviction in most parts of Ontario.

with all the safety devices known in case of a break and is paralleled by a telephone line. Work began immediately and has been pushed. In a few months more the towns will be using Niagara power.

This line is built by the Ontario government. Its cost is to be repaid by the municipalities in thirty years. Under the contracts, the municipalities give 4 per cent. interest on the cost, provide a sinking fund, and pay for the power that they use.

The commission buys this power from the Ontario Power Company exclusively up to 30,000 horse-power; and for amounts over that sum up to 100,000, half from this company and half from any others. The

contract is renewable, but runs for ten years at the outset. In retailing this power to the municipalities, the commission makes contracts for forty years.

The prices paid the Ontario Power Company for this power seem, at first glance, very low. For amounts from 25,000 horse-power upward, the price is $9 or $10 per horse-power, per year, according as the pressure is 12,000 or 60,000 volts.

It seems a perfectly safe conclusion that the individual manufacturer in this highly favored area will be able to contract for almost unlimited power delivered to him over government-owned and operated transmission lines, at a price ranging from $12 per horse-power up, according to the distance of the consumer from the point of generation.

Before glancing at the probable results to the country through which these lines run, it is as well to understand why the Ontario government took this radical step in the direction of public ownership, and why the people supported the government in a proposition that seems so radically opposed to established precedents.

The Ontario government had given life to private corporations at Niagara which might generate power in excess of 400,000 horse-power. Why, then, should the government step in and appoint a commission which has the right and the sovereign power to compete in practically the whole of the area directly tributary to those very plants?

The fact is very striking. It is that these Ontario companies practically sold their limit of power across the border, in New York state; and it is clear enough that Ontario, under whose laws the companies worked, would not in very many years reach a point in industrial life where its demands for power would justify the private companies in building transmission lines and supplying such power.

In other words, western New York, manufacturing for 80,000,000 people, far outbid Ontario, making goods for 6,000,000 people. Western Ontario stood to get little more benefit out of Niagara power than if it had been a thousand miles away instead of from twenty-five to two hundred miles. Hamilton and Toronto, of course, could get the power; but Brantford, Galt, St. Thomas, London, Woodstock, Guelph, and half a hundred smaller towns well situated for manufacturing purposes would have to grow a great deal in industrial importance before they could hope to bid against Buffalo, Rochester, Lockport, and the dozens of other manufacturing towns of western New York and Pennsylvania.

The facts speak for themselves. The Canadian Niagara Power Company, with a capacity of 20,000 horse-power in 1906, sold 15,000 in New York and from 1,500 to 2,000 in Ontario, the rest not contracted for. The Ontario Power Company, through an American ally, gave an option on its entire capacity of 180,000 horse-power to the American industries. It was clear enough that the Ontario field was to remain unexploited. So the government and the municipalities determined to exploit it themselves.

What the result will be is problematical. Undoubtedly the project has stimulated manufacturing industries in the favored area. The demand for sites along the line has been good, but not sensational. Growth of population, with the consequent increase in taxable property, is estimated far to overbalance the principal and interest to be paid each year by the various municipalities. The entrance of new towns into the scheme has already lowered the estimated cost of power. It looks as though there were a fair chance for these towns and cities to get their power-transmission lines at a net profit, after paying for them. In other words, it is possible that the increased taxation will not raise the actual amount of taxes paid by the individual who owns property in the towns along the lines.

To the American mind, the whole affair is startling and enlightening. It went through in less than ten years, directly against the wishes and directly in defiance of the efforts of some of the most powerful corporations and many of the wealthiest individuals in Canada. The will of the people, expressed in local elections, was so overwhelming that the lobbies of capital and influence at the provincial capital were swept aside with hardly an effort. The fact that the people wanted something outweighed precedent, monied interest, even the seemingly established economic laws.